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*The*  
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*Atlas*



*Vernon M. Kleen, Liane Cordle,  
and Robert A. Montgomery*



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# ***The Illinois Breeding Bird Atlas***

VERNON M. KLEEN  
LIANE CORDLE  
ROBERT A. MONTGOMERY

Illinois Natural History Survey  
Champaign, Illinois  
Special Publication 26

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Illinois Natural History Survey, Dr. David L. Thomas, Chief  
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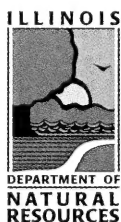
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*Dedicated to all birders who made this publication possible.*



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When I was a child growing up in western Pennsylvania, my family took driving trips to the western states every other summer. I vividly remember driving through Illinois because the scenery and the birds really began to change and become truly midwestern. Embedded in the endless miles of corn were small woodlots and hedgerows filled with Dickcissels, Orchard Orioles, Loggerhead Shrikes, and Red-headed Woodpeckers. Whip-poor-wills and Barred Owls called at night from every state park where we camped. All of these birds bred in my home state, but they were rare and required special efforts to see. In Illinois, even roadside rest areas had many of these birds.

Much had changed when I moved to Illinois in 1984 and started working at the Illinois Natural History Survey. Most of the shrikes and hedgerows were gone and soybeans had replaced corn in about half the fields. My predecessors at the Survey, Dick and Jean Graber, had documented the almost total collapse of grassland bird populations as a result of changing agricultural practices and habitat fragmentation. But one feature remained unchanged: remnant patches of habitat were still filled with interesting birds. Not surprisingly, given the small amount of nonagricultural habitat available in much of central Illinois, the abundance of birds in remnant forest patches during migration was phenomenal. I had not, however, expected such high populations of breeding birds given the well-documented avoidance of small habitat patches, especially by breeding songbirds that wintered in the tropics ("Neotropical migrants" in the jargon). In my first summer in Illinois, I began studying birds in the ultra-fragmented woodlots surrounding Lake Shelbyville in east-central Illinois. To my surprise, the remnant forests around the lake were full of breeding birds, including Yellow-billed Cuckoos, Worm-eating and Kentucky Warblers, Wood Thrushes, Ovenbirds, Louisiana Waterthrushes, Prothonotary Warblers, and Acadian Flycatchers. Even narrow riparian corridors had Northern Parulas, American Redstarts, and Yellow-throated Warblers. In the more extensive forests of the Shawnee National Forest, there were breeding populations numbering in the tens or even hundreds of thousands of Kentucky, Worm-eating, and Yellow-throated Warblers, Scarlet and Summer Tanagers, Ovenbirds, Acadian Flycatchers, and Yellow-billed Cuckoos. Even Swainson's and Cerulean Warblers were still present locally. Breeding birds were also abundant in shrublands and in remnant grasslands and wetlands.

The high populations of breeding birds in Illinois' habitats became even more puzzling, even alarming, when I started studying the nesting success of these birds. Because of the Brown-headed Cowbird, an overabundant brood parasite, much of the breeding effort of many host species

was devoted to raising cowbirds instead of their own young. Those few nests that escaped being parasitized by cowbirds usually had only a small chance of escaping nest predation by generalist nest predators that thrive in the highly fragmented habitats of Illinois. Raccoons were so abundant in many small woodlots that ground nesters had little chance, and Blue Jays, Rat Snakes, and American Crows are problems for breeding birds in many woodlots. These problems were most acute in small agricultural woodlots, but nesting success also proved to be lower than expected in the much more extensive tracts of the Shawnee National Forest.

The research we did while at the Illinois Natural History Survey had the perhaps unfortunate effect of making Illinois famous as a worst-case scenario of the negative consequences of habitat loss and fragmentation. For some of Illinois' breeding songbirds, the entire state is a likely population "sink" where production of young is below levels necessary to compensate for natural adult mortality. If this is true, then Illinois may depend upon immigration from larger forest tracts outside the state where nesting success is much higher. By one scenario, the high populations in Illinois habitats may be bad for regional populations because the rich, productive soils of Illinois may lure birds into habitats where vegetation structure is appropriate and food is plentiful, but chances of raising young are poor (the "ecological trap" scenario).

Over the last decade, however, reasons have emerged for a more optimistic assessment of Illinois' breeding bird populations. Nesting success improves dramatically when fragmentation is reduced, even in relatively small tracts. Parts of the Shawnee National Forest may be population sources for some songbirds and efforts are under way to consolidate forest cover in some of the state's largest remaining forests, including the lower Kaskaskia River, the Cache River, and the Shawnee National Forest. The Shawnee National Forest has created "Forest Interior Management Units" to enhance nesting success of forest birds. Comparable efforts are under way to create large grasslands in areas such as the Midewin National Tallgrass Prairie and Lost Mound National Wildlife Refuge (the former Savanna Army Depot). Wetland birds appear to be less vulnerable to fragmentation than forest and grassland birds. The Conservation Reserve Program is creating additional grassland habitat for at least some rare and declining species (Henslow's Sparrow, Sedge Wren, Northern Bobwhite). Recent efforts to restore genetic diversity to the Greater Prairie-Chicken population appear to have succeeded. As we go to press, Forster's Terns have returned to a newly created island in northern Illinois. Populations of Bald Eagles, Sandhill Cranes, and Cooper's Hawks have recovered to the point

where they are even nesting in heavily settled areas. Massive floodplain restorations in the Cache River provide reasons to be optimistic that Swainson's Warblers will return and that rapidly declining populations of Red-headed Woodpeckers might stabilize over the long run. The "Chicago Wilderness" is actively promoting savanna and grassland restoration and the protection of key migratory bird stopover habitat.

We are also beginning to understand ways in which many breeding birds can survive in Illinois' fragmented landscapes. Many birds of grasslands, shrublands, residential areas, and other openlands are well adapted to coping with nest predators and parasites. Many species of open lands reject cowbird eggs (e.g., American Robin, Warbling Vireo, Baltimore Oriole, Field Sparrow, Brown Thrasher, Gray Catbird) and either chase away predators (Eastern Kingbird, Red-winged Blackbirds) or have such long nesting seasons that they eventually produce young even in the face of extraordinary losses to nest predation (e.g., Field Sparrow, Chipping Sparrow, Indigo Bunting, Northern Cardinal). Not surprisingly, most of these species are abundant, widespread, and have increasing populations. Even some forest birds may be better able to cope with high levels of nest predation than we had predicted. Prothonotary Warblers and Wood Thrushes

live much longer than we thought and both leave areas where nesting success has been low. This latter trait might prove to be an effective way of reducing the extent to which small Illinois woodlots act as "ecological traps."

Clearly, Illinois is not a lost cause for avian conservation. Indeed, if we can restore viable breeding populations in Illinois, then it can be done anywhere. By this view, Illinois is in the vanguard of conservation efforts at retaining bird populations in heavily settled landscapes.

*The Illinois Breeding Bird Atlas* is an important step in efforts to conserve Illinois' birds. It is the culmination of the efforts of hundreds of amateur birdwatchers, Illinois Department of Natural Resources employees, and other wildlife professionals. Thanks to their efforts, we now have unprecedented data on the distribution and status of all of Illinois' breeding birds. The layout is attractive and packed with information on life history attributes, population trends, and occurrence. It will form the basis of long-term assessments of future population and distributional changes. Such data will become especially important as we begin to see the consequences of global climate change. The authors are to be congratulated for compiling an immense amount of data.

— ***Dr. Scott K. Robinson***

Florida Museum of Natural History, Ordway Eminent  
Scholar of Ecosystem Conservation  
Illinois Natural History Survey, Adjunct Professional  
Scientist

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### County Coordinators

County coordinators who took responsibility for multiple counties are indicated as follows: 2 to 5 counties (+), 6 to 9 (++), and 10 or more (+++).

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Al Dierkes	Duvall Jones +		

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Atlasers who assisted with the completion of 2 to 5 atlas blocks are identified by an asterisk (\*), 6 to 10 blocks by two asterisks (\*\*), and 11 or more blocks by three asterisks (\*\*\*).

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Walter Allison	Robert Appleburg	Renee Baade	Mona Baumgartel *
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D. Stricker	W. Vanderploeg	Bernard Weiner	Richard Zullo
Linda Strid	Tom Vanderpoll	Steve Weller	Walt Zuurdeeg

# Introduction

**T**he *Illinois Breeding Bird Atlas* presents a comprehensive summary of information about birds that currently breed in the state, based primarily on data from the Illinois Breeding Bird Atlas project and the North American Breeding Bird Survey, as well as the knowledge gained over many years of experience with the state's avifauna. As the word "atlas" implies, the book includes maps that illustrate the distribution of breeding bird species in Illinois, but it also includes information on their ranges, abundance, habitats, life histories, historical status, and recent population trends.

## Atlas History

The concept of the breeding bird atlas began in England in the 1960s. Atlas projects were conducted throughout western European countries in the 1970s and began in the United States in the 1970s. Several eastern states completed their atlas projects during the 1980s; some are now starting their second round. During the 1980s the number of states conducting breeding bird atlas projects grew rapidly and atlas projects have now been completed in several states. A review of atlas history can be found in Laughlin et al. (1982a).

The Illinois Breeding Bird Atlas project was planned and funded by the Illinois Department of Natural Resources (IDNR) with cooperative support from the Illinois Audubon Society and its chapters, the Illinois chapters of the National Audubon Society, and independent Audubon and birding organizations in the state. The field data were collected by 945 individuals during the period 1986 through 1991.

## Goal and Objectives

The goal of the Illinois Breeding Bird Atlas project was to conduct a comprehensive and systematic statewide survey of breeding birds to document their distribution and status in the state. The objectives of the atlas project were to:

- accurately determine the distribution of all bird species breeding in Illinois during the period 1986–1991.
- develop an avian database from the information collected in the field.
- provide additional distributional information on species listed as threatened or endangered and help identify other species of conservation and management concern.
- document and identify sites that provide critical habitat for rare or locally distributed species.
- provide a database on the distribution of breeding birds to assist in resource management decisions by environmental planners, legislators, developers, conservationists, and others.
- provide a documented baseline data source for biologists and researchers to monitor future change.
- use a survey methodology that can be duplicated in the future.
- use the collective expertise of the professional and nonprofessional birding community in a scientific and educational endeavor, and educate the public about birds as a natural resource.

One aspect of the atlas project that deserves special mention is the value of the data as a baseline for future comparisons. The atlas data provide a robust, unique benchmark that will enable comparative studies in the same vein as the important research the Grabers conducted comparing bird populations in Illinois for the periods 1906–1909 and 1956–1958 (Graber and Graber 1963). The atlas data will be invaluable in determining how bird populations are affected by the continually changing landscape, including urban sprawl, habitat alteration and loss, and habitat restoration.

## Methods

The Illinois Breeding Bird Atlas project was designed to allow atlas surveyors, or atlasers, to contribute to the collection of scientific data. The atlasers, both amateur and professional ornithologists, were largely volunteers. Illinois atlasers selected or were assigned atlas blocks (see Sampling Design section for discussion of blocks), identified as many breeding species as possible within the boundaries of the blocks during the atlas period, and determined the highest degree of breeding evidence for each identified species.

### Standards

During the course of international and national atlasings, standard techniques and procedures were developed, formalized, and adopted by the International Atlas Committee and the North American Ornithological Atlas Committee (NORAC) (Laughlin et al. 1982a; Laughlin et al. 1982b; Sutcliffe et al. 1986; North American Ornithological Atlas Committee 1990). The protocol for the Illinois Breeding Bird Atlas project followed these standards.

### Planning and Management

The Illinois Breeding Bird Atlas project was designed to be a county-by-county effort with 15 to 25 new counties starting up each year during the six-year period. The 102 counties in Illinois (Fig. 1) range from approximately 170 square miles for Putnam County to 1,174 square miles for McLean County. The start-up years for the counties are shown in Figure 2. Individuals were recruited from each county to serve as county coordinators. Their responsibilities included 1) recruiting and instructing volunteers; 2) distributing the data forms and maps for the blocks to be atlased; 3) urging the volunteers to make every effort to "confirm" as many species as possible in their atlas blocks; 4) monitoring their county's coverage; and 5) receiving the completed data forms from the atlasers at the end of each breeding season, checking them for accuracy, and forwarding them to the project coordinator. The service time for county coordinators ranged from one year for a single county to all six years for a single county or multiple counties. County coordinators were provided small stipends to help cover their expenses.

By the third year of the atlas project it was apparent that counties with larger populations and larger numbers of atlasers were achieving the project goals and objectives while other counties, particularly the less populated ones, were not being adequately surveyed despite the county-by-county phase-in system. Data collection for priority blocks in the northeastern counties was nearing completion and sampling of nonpriority blocks was starting. Therefore, supplemental methodologies were developed in order to achieve at least minimal coverage in every county. One method was to contract with individuals to atlas all priority

blocks in one or more counties. Between 1988 and 1991 contracts were used to obtain data from some or all priority blocks in 17 counties (Fig. 2). A second method was the "block-busting" weekend, where atlasers participated in a team effort to survey all priority blocks in an entire county on weekends (Friday night through Sunday afternoon). Block-busting weekends were scheduled on all June weekends and the first weekend in July during the last three years of the atlas project. Data for some or all priority blocks in 37 counties (Fig. 2) were obtained through block-busting efforts.

### Sampling Design

A systematic, statewide sampling method was established for Illinois by creating a grid system based on the U.S. Geological Survey (USGS) 7.5-minute quadrangle maps. The sample unit for the Illinois atlas project, the atlas block, was based on protocol recommended by NORAC (Laughlin et al. 1982b). Atlas blocks were derived by subdividing the 7.5-minute quadrangle maps into six equal areas, each quad being divided vertically in half and horizontally in thirds (Fig. 3). The resulting blocks were generally about 10 square miles in area. This process created 6,151 blocks for the state (from the 1,072 7.5-minute quadrangles that cover all or part of Illinois). Atlas blocks were assigned identification numbers: the first three numbers (001 to 287) identify the 15-minute USGS quadrangle map; the letter (A, B, C, or D) identifies the 7.5-minute quadrangle map (four 7.5-minute maps comprise a 15-minute map); and the last number (1 to 6) identifies the block (Fig. 3).

Sampling all of the blocks in the state was unrealistic from funding and logistical perspectives. Therefore the number "3" block from each 7.5-minute quadrangle was chosen to be sampled in every quad; these were called priority blocks. The goal was to sample all 1,018 priority blocks in the state (due to irregularities in the state boundary, there are fewer number "3" blocks than the total number of 7.5-minute quadrangles). The remaining blocks (numbers 1, 2, 4, 5, and 6) were called nonpriority blocks.

For the purposes of field work, the boundaries of priority blocks were marked on 7.5-minute quadrangle and county highway maps. These maps were then forwarded to the county coordinators for distribution to the atlasers. Atlasers were requested to mark locations of rare, threatened, endangered or other significant species directly onto the 7.5-minute quadrangle maps and return the maps to the project coordinator at the conclusion of the project.

Although sampling priority blocks was a sound design, much of the area of the state was not sampled. Thus, additional sampling provided important supplemental data. After the priority blocks in a county had been surveyed, the county

coordinators could approve surveys of nonpriority blocks. The sampling of nonpriority blocks was concentrated in northeastern Illinois (Lake, Cook, DuPage, and Will counties).

### Breeding Status Categories and Evidence Criteria

The four breeding status categories listed from highest to lowest level of certainty were Confirmed (CO), Probable (PR), Possible (PO), and Observed (OB) (Table 1). The Confirmed, Probable, and Possible categories provide evidence of breeding. The Observed category provides only evidence of occurrence and not of breeding. Atlasers used the Observed category to record the occurrence of migrants and nonbreeding species seen in a block during the breeding season or of wide-ranging species (e.g., vultures and herons) that may forage some distance from their nest sites.

The classification of a sighting into the four breeding status categories was based on the type of breeding evidence observed. Twenty breeding evidence criteria were used (Table 1). Once a species was Confirmed in an atlas block

(regardless of the year), additional evidence for that species was no longer required. The presence of a cowbird egg or young in a nest or a fledgling cowbird begging or being fed by another species was determined to be Confirmed breeding for both the cowbird and the host species.

The breeding criteria and evidence codes used in the atlas followed the recommendations of NORAC (Sutcliffe et al. 1986; Illinois Department of Conservation 1986). For the atlasers, the codes were defined in the *Handbook for Surveyors* (IDOC 1986) and printed on the data form they used to record their observations in the field.

### Species of Special Consideration

Records of species that were rare, listed as threatened or endangered, of special management concern, difficult to distinguish, or reported outside of their expected range in the state were required to have additional documentation from the atlasers to ensure correct identification before being included in the database. For these species (Table 2), atlasers were to provide written details about location, habitat

**Table 1. Breeding status categories and breeding evidence criteria used for the Illinois Breeding Bird Atlas project. The four breeding status categories (CO, PR, PO, and OB) are defined by 20 breeding evidence criteria.**

Codes	Breeding Evidence Criteria
Observed (OB)	
O	Species (male or female) <u>observed</u> in a block during the breeding season, but believed not to be breeding (i.e., none of the criteria listed for the other status categories in this table were observed)
Possible (PO)	
/	Species (male or female) observed in suitable nesting habitat during its breeding season.
X	Singing male present in suitable nesting habitat during its breeding season.
Probable (PR)	
M	<u>Multiple males</u> (7 or more) singing in suitable nesting habitat during the species' breeding season.
P	<u>Pair</u> observed in suitable habitat during its breeding season.
T	Permanent <u>territory</u> presumed through defense (e.g., chasing of other birds; or song at the same location on at least two occasions a week or more apart).
C	<u>Courtship</u> behavior or <u>copulation</u> .
N	Visiting probable <u>nest site</u> .
A	<u>Agitated</u> behavior or <u>anxiety</u> calls from adult.
B	Nest <u>building</u> by wrens or excavation of holes by woodpeckers.
Confirmed (CO)	
NB	<u>Nest building</u> by all species except wrens and woodpeckers.
PE	<u>Physiological evidence</u> of breeding (i.e., highly vascularized, edematous incubation "brood" patch or egg in oviduct) based on bird in hand.
DD	<u>Distraction display</u> or injury feigning.
UN	<u>Used nest</u> or eggshells found.
FL	Recently <u>fledged young</u> (of altricial species) incapable of sustained flight or downy young (of precocial species) restricted to the natal area by dependence on adults or limited mobility.
ON	<u>Occupied nest</u> ; adults entering or leaving nest site in circumstances indicating occupied nest (includes high nests or nest holes, the contents of which cannot be seen) or adult incubating or brooding.
FS	Adult carrying <u>fecal sac</u> .
FY	Adult carrying <u>food</u> for <u>young</u> , or feeding recently fledged young.
NE	<u>Nest</u> with <u>egg(s)</u> .
NY	<u>Nest</u> with <u>young</u> seen or heard.

preference or occurrence, breeding evidence observed, behavior, and specific dates, and to mark the location of observation on the atlas block map. Any species not listed on the field data form required the same documentation.

### Block Coverage

A primary objective of the atlas project was to document the status of every species that occurred in every priority block and to confirm breeding for as many species as possible. Atlasers were requested to thoroughly survey all habitats in their blocks to find most of the species present. Most of the sampling effort in June was directed towards documenting species presence and in July and August the goal was to try to confirm breeding. The sampling of a block in subsequent years was intended to fill in knowledge gaps, such as expected species that were not found, species reported with breeding evidence other than Confirmed, and early nesting species (January through May).

The atlas project utilized two criteria to determine if blocks were adequately sampled: that the majority of species believed to be present had been documented and the majority of those found were Confirmed as breeding. Other atlas projects found that a minimum of 15 field hours spread over several days was usually needed to detect 75% or more of the species present in a block and that several more hours were necessary to confirm breeding for the majority of those present (Laughlin et al. 1982b).

Another method used by other atlas projects to determine sampling adequacy was the establishment of species goals for each block (Raynor 1983). In Illinois the project coordinator estimated the expected number of species in a priority block based on the diversity of habitat types as ascertained from the 7.5-minute quadrangle maps. Generally the expected number of species ranged from 50 for intensely cultivated blocks to more than 90 for those blocks with a diversity of habitats (e.g., wetland, forest, shrub, tree lines).

### Data Collection and Management

Atlasers were provided with field data forms (Fig. 4) which listed every species expected to be found during the project. For each sampled block, they recorded the breeding evidence codes for each species observed, the survey date, time spent in the field, names of other observers assisting, and the date each species was confirmed. Because the same field data form was used in subsequent visits to a block, atlasers were aware of which species could potentially be upgraded to a higher breeding status category.

At the end of each field season, atlasers transferred new data from their field forms onto data entry forms (Fig. 5) and forwarded the completed forms to their county coordinator. The county coordinator was responsible for checking the forms for accuracy, completion, errors (e.g., wrong species codes), misinformation (e.g., improper use of codes, such as using NB rather than B for wrens or woodpeckers), or missing documentation. The data forms were forwarded to the project coordinator for further review, and then to the Max McGraw Wildlife Foundation where the data was entered into the database and additional quality-control checks were performed. Draft species distribution maps provided additional information for review by the project coordinator, Max McGraw Wildlife Foundation staff, and ornithologists at the Illinois Natural History Survey.

### Limitations and Biases

Although the atlasing effort yielded a tremendous amount of information, it did not find every species present. Potential factors that contributed to underrepresentation in the atlas project included

- Insufficient effort (hours, days, or years) spent in the block (most blocks were surveyed only one or two years).
- Species that are uncommon or rare, habitat specialists, had localized distributions, or of sporadic occurrence.

**Table 2. Species of special consideration. These species, which were listed on the field data form (Fig. 4), as well as any species not listed on the form, required atlasers to provide additional data.**

Northern Pintail	Sharp-shinned Hawk	Forster's Tern	Prairie Warbler
Northern Shoveler	Cooper's Hawk	Black Tern	Black-and-white Warbler
Hooded Merganser	Red-shouldered Hawk	Barn Owl	Worm-eating Warbler
Ruddy Duck	Swainson's Hawk	Long-eared Owl	Swainson's Warbler
Eared Grebe	King Rail	Short-eared Owl	Ovenbird
Double-crested Cormorant	Virginia Rail	Alder Flycatcher	Hooded Warbler
American Bittern	Sora	Least Flycatcher	Summer Tanager
Snowy Egret	Common Moorhen	Western Kingbird	Bachman's Sparrow
Little Blue Heron	Sandhill Crane	Fish Crow	Henslow's Sparrow
Black-crowned Night-Heron	Upland Sandpiper	Bewick's Wren	Blue Grosbeak
Yellow-crowned Night-Heron	Wilson's Snipe	Brown Creeper	Western Meadowlark
Black Vulture	Wilson's Phalarope	Veery	Yellow-headed Blackbird
Mississippi Kite	Ring-billed Gull	Blue-winged Warbler	House Finch
Bald Eagle	Herring Gull	Yellow-throated Warbler	Pine Siskin
Northern Harrier	Common Tern		

- Species that are not common in the more easily accessible habitats, such as along roadsides.
- Species requiring specialized sampling efforts, such as nocturnal and crepuscular birds (e.g., owls, night hawks, or woodcock), and secretive species (e.g., rails and some other wetland species).
- Early or late breeders, relative to when atlasers did their field work.
- Variability in the skills and abilities of atlasers.
- Sampling techniques required to obtain data for unsampled blocks. Many blocks sampled during blockbusting weekends were not adequately sampled. While the survey of these blocks was intensive and conducted by experienced birders, only 12–15 hours were spent in most of these blocks. Because atlasers may have been unfamiliar with the blocks and/or the rare, uncommon, or intermittently occurring species in the area, special or rare habitats may not have been sampled. Since these blocks were generally sampled in a single day in June or early July, species that bred early in the season (e.g., waterfowl, owls) or late in the season may have been missed.

## Results and Discussion

### Atlas Coverage and Effort

The Illinois Breeding Bird Atlas project was dependent on atlasers to survey their selected or assigned blocks as thoroughly as possible from 1986 through 1991. The total number of blocks sampled was 1,286; of these, 998 (78%) were priority and 288 (22%) were nonpriority blocks (Fig. 6). Of the 1,018 potential priority blocks, 98% were sampled during at least one of the six project years. Blocks that were sampled during the atlas project are listed by county in Appendix A.

During the project, 945 atlasers spent 44,913 hours collecting data (31,602 hours or 71% in priority blocks and 13,311 hours or 29% in nonpriority blocks); this is equivalent to 22 man-years or 5 years and 2 months of consecutive time (i.e., 24 hours a day) and an average of 48 observer hours per person. Observer hours averaged 31.7 hours per priority block and 34.9 hours per block for all blocks. Vermilion, Will, and Cook counties had the most sampling hours for priority blocks in their counties. The number of observer hours per priority block is illustrated in Figure 7 and listed in Appendix B.

The atlas database consists of 74,277 species records for all 1,286 blocks (a species record is an occurrence of a species in a block using the highest breeding status category recorded for that species in the block); however, considerably more records were actually collected. Records of a species reported at a higher breeding status category superseded those of lower categories and only those with the highest status category for a species in each block were retained in the atlas database. Forty-six percent of the records from all blocks were Confirmed, 25.0% were Probable, 23.8% were Possible, and the remaining 5.2% were Observed status. Priority blocks yielded 62,430 records (84% of the total records). Of the priority block records, 45.7% were Confirmed, 25.0% were Probable, 24.5% were Possible, and 4.8% were Observed status, which was similar to the distribution of breeding status codes for all blocks.

### Species Information

The four breeding status categories—Confirmed, Probable, Possible, and Observed—indicate levels of certainty that a species is breeding based on different types of evidence (Table 1). The term “breeding evidence,” as used in the atlas, refers to Confirmed, Probable, and Possible breeding status categories. “Observed” records were not considered evidence of breeding.

A total of 216 species was recorded during the atlas project and included in the database; 208 of these were reported from priority blocks. For all blocks, breeding evidence was reported for 197 species (172 Confirmed, 15 Probable, and 10 Possible) based on the highest level of breeding status in at least one block and another 19 species

were reported only as Observed. For priority blocks, the atlas project documented breeding evidence for 192 species (166 Confirmed, 14 Probable, and 12 Possible) based on the highest level of breeding status in at least one block and another 16 species were reported only as Observed.

The number of species recorded with breeding evidence in each priority block is illustrated in Figure 8 and listed in Appendix B. The average number of breeding species reported per block was 60 (range 3–111) and 55 (range 1–111) in priority blocks and in all blocks, respectively. The number of species with breeding evidence per block is shown in Table 3. In 70% of the priority blocks there were 50–79 species with breeding evidence. Six blocks (which were all priority blocks) had 100 or more species with breeding evidence (Appendix B). Both the highest number of species with breeding evidence (111) and the highest number of Confirmed species (107) were recorded in the Danville Northwest priority block (149B3) in Vermilion County. This block also received one of the highest sampling efforts (247 hours). Because approximately 60% of the landscape of Illinois is cropland (Luman et al. 1996), numerous blocks were located in largely agricultural areas, and many blocks with low numbers of species were dominated by cropland. Some nonpriority blocks had low numbers of species reported because data submitted were for rare species only or species not reported from adjacent priority blocks.

For counties, the number of species with breeding evidence in priority blocks reported ranged from 69 to 141 (Appendix C). Thirty-eight of the 102 counties had 100 or more species with breeding evidence in priority blocks. Cook, Will, Winnebago, Vermilion, and Lake counties had 141, 128, 127, 124, and 123 species, respectively. The two

**Table 3. Frequency distribution of the number of species with breeding evidence reported per block.**

Number of species	Priority Blocks		All Blocks	
	# Blocks	% Blocks	# Blocks	% Blocks
>= 100	6	0.6	6	0.5
90-99	14	1.4	18	1.4
80-89	50	5.0	70	5.4
70-79	167	16.7	196	15.2
60-69	282	28.3	310	24.1
50-59	255	25.6	294	22.9
40-49	134	13.4	154	12.0
30-39	66	6.6	91	7.1
20-29	23	2.3	43	3.3
<=19	1	0.1	104	8.1
Total	998	100.0	1,286	100.0



counties with 100 or more Confirmed species in priority blocks were Vermilion (117) and Will (102).

Several species were found to be widespread in Illinois during the atlas project. Among the 192 species with breeding evidence in priority blocks, 60 (31%) species were reported in at least 50% of the priority blocks and of these 60 species, 22 (11%) were reported in 90% or more of the blocks (Table 4). The five most frequently reported species were the Red-winged Blackbird, American Robin, Mourning Dove, House Sparrow, and Common Grackle.

The five species most frequently Confirmed in priority blocks were the House Sparrow, American Robin, Barn Swallow, Red-winged Blackbird, and European Starling (Table 5). Twenty-two of the 166 Confirmed species in priority blocks were reported as Confirmed in at least 50% of the priority blocks. Some species are more easily Confirmed than others due to factors such as overall abundance, observable breeding behavior, and habitat preference. A comparison of Tables 4 and 5 shows that many of the most frequently Confirmed species are among the most widespread species, and vice versa.

Many species have limited distributions in the state. Nearly half (90) of the 192 species with breeding evidence in priority blocks were found in 100 (10%) or fewer priority blocks (Appendix D). Fifty species with breeding evidence were reported from 10 or fewer priority blocks. Some of the species with limited distributions have always been uncommon in the state, such as those at the edge of their range. Others have only recently become less common. Twenty-

seven (38%) of the 90 species with breeding evidence in priority blocks that were found in 100 or fewer priority blocks are listed as state threatened or endangered species. (The Loggerhead Shrike was the only state threatened or endangered species with evidence of breeding in more the 100 priority blocks).

The Species Accounts section of this book includes accounts for 183 species—the 172 Confirmed as breeding during the atlas project and 11 not Confirmed but known or likely to have bred in the state during the atlas project. Forty-four of the 216 species recorded by the atlas project were not Confirmed (Table 6)—11 of these were most likely breeders and have been included in the species accounts; the other 33 were considered to be either late spring migrants or summer lingerers. Six species—the Northern Shoveler, Peregrine Falcon, Wilson's Snipe, Herring Gull, Common Tern, and Brewer's Blackbird—were Confirmed as breeding only in nonpriority blocks.

Breeding evidence was reported for the first time in the state for two species not previously known to breed in Illinois, the Golden-crowned Kinglet (Confirmed) and Black-throated Green Warbler (Possible). In addition, the Peregrine Falcon has returned as a breeding species in the state as a result of restoration efforts in the Chicago area.

**Table 4. The most frequently reported species with breeding evidence in priority blocks. The 22 species listed were found in 90% or more of the 998 priority blocks.**

Rank	Species	# of Priority Blocks	% of Priority Blocks
1	Red-winged Blackbird	993	99.5
2	American Robin	990	99.2
3	Mourning Dove	988	99.0
4	House Sparrow	988	99.0
5	Common Grackle	986	98.8
6	Indigo Bunting	985	98.7
7	Barn Swallow	983	98.5
8	Northern Cardinal	973	97.5
9	European Starling	972	97.4
10	Eastern Meadowlark	971	97.3
11	American Goldfinch	966	96.8
12	Song Sparrow	960	96.2
13	Brown Thrasher	958	96.0
14	Blue Jay	957	95.9
15	Common Yellowthroat	954	95.6
16	Brown-headed Cowbird	951	95.3
17	Killdeer	948	95.0
18	Eastern Kingbird	935	93.7
19	American Crow	927	92.9
20	Northern Flicker	920	92.2
21	Gray Catbird	906	90.8
22	Dickcissel	899	90.1

**Table 5. The most frequently Confirmed species in priority blocks. The 22 species listed were Confirmed as breeding in at least half of the 998 priority blocks. The number of priority blocks with Confirmed status and the percent of total priority blocks are given.**

Rank	Species	Priority Blocks with Confirmed Status	
		#	%
1	House Sparrow	953	95
2	American Robin	949	95
3	Barn Swallow	897	90
4	Red-winged Blackbird	893	89
5	European Starling	890	89
6	Common Grackle	854	86
7	Mourning Dove	733	73
8	Northern Cardinal	671	67
9	Brown Thrasher	633	63
10	Blue Jay	598	60
11	Killdeer	594	60
12	House Wren	594	60
13	Eastern Bluebird	585	59
14	Red-headed Woodpecker	558	56
15	Eastern Meadowlark	558	56
16	Eastern Kingbird	557	56
17	Song Sparrow	557	56
18	Horned Lark	532	53
19	Chipping Sparrow	531	53
20	Rock Pigeon	510	51
21	Indigo Bunting	506	51
22	Baltimore Oriole	503	50

**Table 6. Species reported but not Confirmed as breeding in any block during the atlas project. These 44 species are listed by the highest breeding status categories recorded in the atlas project. Species accounts are included in the atlas for species considered to have bred in the state during the period of the atlas project. For the Probable and Possible categories, the records listed are for breeding evidence categories (PR, PO); the records are all Observed status for the Observed category.**

Species	Species Account	Comments and Number of Atlas Records
<b>PROBABLE</b>		
American Black Duck <i>Anas rubripes</i>	No	Occasional breeding species; 4 records (1 priority block each in DuPage and Lee counties; and 1 nonpriority block each in Cook and Will counties).
Green-winged Teal <i>Anas crecca</i>	No	Occasional breeding species; 3 records (1 priority and 1 nonpriority block in Cook County and 1 nonpriority block in DuPage County).
Redhead <i>Aythya americana</i>	No	Occasional breeding species; 2 records (1 nonpriority block each in Lake and Will counties).
Lesser Scaup <i>Aythya affinis</i>	No	Occasional breeding species; 2 records (1 priority and 1 nonpriority block in Cook County).
American Bittern <i>Botaurus lentiginosus</i>	Yes	Breeds in Illinois but not Confirmed during the atlas project. This is a state endangered species.
Snowy Egret <i>Egretta thula</i>	Yes	Breeds in Illinois but not Confirmed during the atlas project. This is a state endangered species.
Osprey <i>Pandion haliaetus</i>	Yes	Breeds in Illinois but not Confirmed during the atlas project. This is a state endangered species.
Caspian Tern <i>Sterna caspia</i>	No	Nonbreeding species; 1 record (1 priority block in DeWitt County). This record likely represents an early fall migrant.
Alder Flycatcher <i>Empidonax alnorum</i>	Yes	No evidence of breeding in Illinois but late migrants or summering birds suggest breeding may be attempted.
Yellow-bellied Flycatcher <i>Empidonax flaviventris</i>	No	Nonbreeding species; 1 record (priority block in Winnebago County). This is most likely a late spring migrant.
Mourning Warbler <i>Oporonus philadelphia</i>	Yes	Breeds in Illinois but not Confirmed during the atlas project.
Canada Warbler <i>Wilsonia pusilla</i>	Yes	Breeds in Illinois but not Confirmed during the atlas project.
Clay-colored Sparrow <i>Spizella pallida</i>	Yes	Breeds in Illinois but not Confirmed during the atlas project.
White-throated Sparrow <i>Zonotrichia albicollis</i>	No	3 records (1 priority block in Kane County and 2 nonpriority blocks in Cook County). Confirmed as a breeding species in Cook County in 2001 after the atlas project ended.
Purple Finch <i>Carpodacus purpureus</i>	No	Nonbreeding species ; 3 records (1 priority block in Shelby County and 2 nonpriority blocks, 1 each in Rock Island and Lee counties). These records are mostly likely late spring migrants.
<b>POSSIBLE</b>		
Gadwall <i>Anas strepera</i>	No	Occasional breeding species; 2 records (1 priority and 1 nonpriority block in Cook County).
Ring-necked Duck <i>Aythya collaris</i>	No	Very rare breeding species; 4 records (1 priority block in Cook County and 3 nonpriority blocks, 1 each in Cook, Kane and Will counties). These records are most likely lingering birds.
Common Merganser <i>Mergus merganser</i>	No	Nonbreeding species; 2 records (Cook and Will counties).
Red-breasted Merganser <i>Mergus serrator</i>	No	Nonbreeding species; 1 record (1 nonpriority block in Will County). This record is most likely an incidental summer occurrence.
Common Loon <i>Gavia immer</i>	No	Nonbreeding species; 1 record (priority block in Cook County). This record is most likely a lingering bird.
Little Blue Heron <i>Egretta caerulea</i>	Yes	Breeds in Illinois but not Confirmed during the atlas project. This is a state endangered species.
Tricolored Heron* <i>Egretta tricolor</i>	No	Nonbreeding species; 1 record (1 priority block in Cook County). This record is an incidental summer occurrence.

Table 6 (Continued).

Species	Species Account	Comments and Number of Atlas Records
Long-eared Owl <i>Asio otus</i>	No	Regular but rare and hard-to-find breeding species; 2 records (1 priority block in Wabash County and 1 nonpriority block in Winnebago County).
Black-throated Green Warbler <i>Dendroica virens</i>	Yes	Breeds in Illinois but not Confirmed during the atlas project.
Swainson's Warbler <i>Limnothlypis swainsonii</i>	Yes	Breeds in Illinois but not Confirmed during the atlas project. This is a state endangered species.
<b>OBSERVED</b>		
American Wigeon <i>Anas americana</i>	No	Nonbreeding species; 2 records (1 nonpriority block in DuPage County and 1 nonpriority block in Will County). This record is most likely a lingering bird.
Canvasback <i>Aythya valisineria</i>	No	Very rare breeding species; 1 record (nonpriority block in Kane County). This record is most likely a lingering bird.
Greater Scaup <i>Aythya marila</i>	No	Nonbreeding species; 1 record (nonpriority block in Cook County). This record is most likely a lingering bird.
Bufflehead <i>Bucephala albeola</i>	No	Nonbreeding species; 1 record (nonpriority block in Will County). This record is most likely a lingering bird.
Brown Pelican* <i>Pelecanus occidentalis</i>	No	Nonbreeding species; 1 record (priority block in Lake County). This record is most likely an incidental summer occurrence.
Black Vulture <i>Coragyps atratus</i>	Yes	Breeds in Illinois but not Confirmed during the atlas project.
Merlin <i>Falco columbarius</i>	No	Nonbreeding species; 2 records (1 priority block in Hancock County and 1 nonpriority in Lee County). These records are incidental summer occurrences.
Wilson's Phalarope <i>Phalaropus tricolor</i>	No	Occasional breeding species; 2 records (1 priority and 1 nonpriority in Cook County). This is a state endangered species.
Laughing Gull <i>Larus atricilla</i>	No	Nonbreeding species; 2 records (1 priority in Lake County and 1 nonpriority in Cook County). These records are incidental summer occurrences.
Franklin's Gull <i>Larus pipixcan</i>	No	Nonbreeding species; 1 record (priority block in Lake County). This record is an incidental summer occurrence.
Little Gull* <i>Larus minutus</i>	No	Nonbreeding species; 1 record (priority block in Lake County). This record is an incidental summer occurrence.
Least Tern <i>Sterna antillarum</i>	No	Regularly breeds on islands in the Ohio and Mississippi rivers in extreme southern Illinois; 1 record (priority block in Pope County). This species is a state and a federally endangered species.
Western Kingbird <i>Tyrannus verticalis</i>	No	Sporadic breeding species, currently nesting in Sangamon and Madison counties; 1 record (priority block in Vermilion County).
Tennessee Warbler <i>Vermivora peregrina</i>	No	Nonbreeding species; 2 records (1 priority in Lake County and 1 nonpriority in Cook County). These records are most likely late spring migrants.
Bay-breasted Warbler <i>Dendroica castanea</i>	No	Nonbreeding species; 1 record (nonpriority block in Cook County). This record is most likely a late spring migrant.
Blackpoll Warbler <i>Dendroica striata</i>	No	Nonbreeding species; 1 record (nonpriority block in Cook County). This record is most likely a late spring migrant.
Fox Sparrow <i>Passerella iliaca</i>	No	Nonbreeding species; 1 record (nonpriority block in Cook County). This record is most likely a late spring migrant.
White-crowned Sparrow <i>Zonotrichia leucophrys</i>	No	Nonbreeding species; 3 records (1 priority block in Richland County and 2 nonpriority blocks in Cook County). These records are most likely late spring migrants.
Dark-eyed Junco <i>Junco hyemalis</i>	No	Nonbreeding species; 1 record (priority block in Champaign County). This record is most likely a late spring migrant.

\* Species not likely to have occurred in Illinois during the atlas project.

Breeding evidence was also recorded for Lawrence’s and Brewster’s warblers, which are hybrids, and the Ringed Turtle-Dove, an introduced domesticated species that does poorly in the wild in North America (American Ornithologists’ Union 1998; Sibley 2000). Because they are not recognized as valid species, their records were not included in the data summaries (i.e., not included in the total of 216 species, etc.). The Lawrence’s Warbler and Ringed Turtle-Dove were Confirmed as breeding in northeastern Illinois and the Brewster’s Warbler was noted as a Probable breeder in southern Illinois.

Some species known to currently breed in Illinois were not found during the atlas project. Eight species, including five that have been Confirmed as breeding since the atlas project ended in 1991, are listed in Table 7. Three species—the Purple Gallinule, Northern Saw-whet Owl, and Blue-headed Vireo—have been known to occasionally breed in Illinois. Since the atlas project ended five additional species have been documented as breeding for the first time in Illinois: the Black-necked Stilt, Eurasian Collared-Dove, Scissor-tailed Flycatcher, Violet-green Swallow, and Painted Bunting. The White-throated Sparrow, which was reported as a probable breeder during the atlas project, was confirmed as breeding in Chicago in 2001 (Williamson 2002).

Atlas project data documented changes in several species’ known ranges and populations, and the data provide robust baseline information to compare and measure future changes. Species with notable increases in breeding range and/or population in the state include

- Northward expansion of breeding range for the Mississippi Kite, White-eyed Vireo, Northern Mockingbird, Kentucky Warbler, Summer Tanager, and Blue Grosbeak.
- Southward expansion of breeding range for the Double-crested Cormorant, Bald Eagle, Tree Swallow, Cliff Swallow, House Wren, Chestnut-sided Warbler, and Rose-breasted Grosbeak.
- Population increase for Henslow’s Sparrow, possibly due to an increase in available habitat created by programs such as the Conservation Reserve Program (CRP).

- Population expansion for the House Finch, which arrived as a breeding species just before the atlas project began and rapidly became more widespread and abundant during the six years of the project.

Species with notable decreases in breeding range and/or population include

- The King Rail, Upland Sandpiper, Barn Owl, Loggerhead Shrike, Bell’s Vireo, Bewick’s Wren, and Swainson’s Warbler. These seven species were found during the atlas project. The Swainson’s Warbler had only one atlas record and may now be extirpated from the state.
- The Piping Plover, Nashville Warbler, and Bachman’s Sparrow. These species bred in Illinois prior to the 1950s but are currently considered extirpated from the state. None of these species were found during the atlas project. The Piping Plover formerly bred along the Lake Michigan shoreline, the Nashville Warbler formerly bred in extreme northeastern Illinois, and Bachman’s Sparrow formerly bred throughout Illinois.

Currently 34 species of birds are listed by the State of Illinois as either endangered or threatened. This total includes two federally listed endangered species (Piping Plover and Least Tern) and a federally listed threatened species (Bald Eagle). Thirty-two of the 34 species were at least Observed during the atlas project. Only the Piping Plover and the Black Rail were not reported at all. The Wilson’s Phalarope and Least Tern were reported as Observed only. For all blocks evidence of breeding was found for 30 of the state endangered or threatened species and 25 were Confirmed. In priority blocks, breeding evidence was found for 28 of the 34 species and 23 were Confirmed (Table 8).

The frequency of breeding evidence codes for species with Confirmed, Probable, or Possible records in priority blocks is given in Appendix E. Of the 20 breeding evidence codes, the four most frequently used codes represent 56% of the records. They were fledged young (FL), a singing male

**Table 7. Occasional breeding species in Illinois not reported during the atlas project.**

Species	Comment
Purple Gallinule ( <i>Porphyrio martinica</i> )	Rare nesting species at Lake Mermet in Massac County (a)
Black-necked Stilt ( <i>Himantopus mexicanus</i> )	First Confirmed breeding record in Illinois in Jackson County in 1994 (b)
Eurasian Collared-Dove ( <i>Streptopelia decaocto</i> )	First observation (1997) and first Confirmed breeding record (1998) in Illinois in Clinton County (c)
Northern Saw-whet Owl ( <i>Aegolius acadicus</i> )	Occasional breeding species in northwestern counties; fledglings found in 1982 in Cook and Will counties (a)
Scissor-tailed Flycatcher ( <i>Tyrannus forficatus</i> )	First Confirmed breeding record in Illinois in Randolph County in 2000 (d)
Violet-green Swallow ( <i>Tachycineta thalassina</i> )	Rare breeding species. First Confirmed evidence of nesting (hybridized with a Tree Swallow) in Winnebago County in 1994 (e)
Painted Bunting ( <i>Passerina ciris</i> )	First Confirmed breeding record in Illinois in St. Clair County in 2000 (f)
Blue-headed Vireo ( <i>Vireo solitarius</i> )	Occasional nesting in central and northern Illinois (a)

(a) Bohlen 1989; (b) Fink 1994; (c) Kleen 1999; (d) Kleen et al. 2001; (e) Johnson and Moskoff 1995; (f) Kassebaum 2001.

present in suitable habitat during breeding season (X), adult(s) carrying food for young (FY), and species observed in suitable nesting habitat during breeding season (/). Information about breeding evidence codes for Confirmed species in priority blocks is given by groups in Appendix F.

### Additional Summary Information

Summary and results information may be found in the appendices at the end of this book. These appendices provide information by blocks, counties, and species and include the following:

- **Block:** The summary of data by block in Appendix B includes the 7.5-minute quadrangle and the county for each block (blocks occurring in multiple counties were assigned to the county with the greatest area in the block) as well as the number of species with Confirmed, Probable, Possible, and Observed status;
- **County:** Appendix C gives a summary of the data by county for species found in priority blocks. It lists the number of species with Confirmed, Probable, Possible, or Observed breeding status and the number of species with breeding evidence, using the highest status that occurred in the county. Appendix A is a listing of 7.5-minute quadrangles and atlas blocks by county.
- **Species:** Appendix D gives a summary of atlas data for the species recorded during the atlas project. The appendix includes the number of priority blocks with Confirmed, Probable, Possible, and Observed records; the total number of priority blocks with Confirmed, Probable, or Possible records; and the number of counties with Confirmed, Probable, or Possible records for each species for priority blocks.

**Table 8. Summary of atlas data for the 34 state and federally endangered and threatened species. The number of priority blocks and total blocks with breeding evidence (BE) (i.e., Confirmed, Probable, or Possible records) and the highest confirmation status for all blocks are listed. The Piping Plover and Black Rail were not found during the atlas project. Wilson's Phalarope and Least Tern were Observed only.**

	Priority Blocks		Total Blocks	
	# of Blocks with BE	Highest Status	# of Blocks with BE	Highest Status
<b><i>State Endangered</i></b>				
Greater Prairie-Chicken	1	CO	1	CO
American Bittern	6	PR	12	PR
Snowy Egret	1	PR	2	PR
Little Blue Heron	7	PO	7	PO
Black-crowned Night-Heron	33	CO	71	CO
Yellow-crowned Night-Heron	18	CO	28	CO
Osprey	2	PR	5	PR
Mississippi Kite	9	CO	9	CO
Northern Harrier	45	CO	59	CO
Swainson's Hawk	5	CO	6	CO
Peregrine Falcon	0	OB	3	CO
King Rail	8	CO	11	CO
Black Rail	0	-	0	-
Piping Plover *FE	0	-	0	-
Upland Sandpiper	41	CO	57	CO
Wilson's Phalarope	0	OB	0	OB
Common Tern	0	OB	2	CO
Forster's Tern	1	CO	2	CO
Least Tern *FE	0	OB	0	OB
Black Tern	7	CO	18	CO
Barn Owl	4	CO	4	CO
Short-eared Owl	4	CO	5	CO
Bewick's Wren	4	CO	5	CO
Swainson's Warbler	1	PO	1	PO
Henslow's Sparrow	11	CO	22	CO
Yellow-headed Blackbird	15	CO	48	CO
<b><i>State Threatened</i></b>				
Pied-billed Grebe	43	CO	93	CO
Least Bittern	19	CO	35	CO
Bald Eagle *FT	6	CO	6	CO
Red-shouldered Hawk	45	CO	63	CO
Common Moorhen	11	CO	34	CO
Sandhill Crane	2	CO	11	CO
Brown Creeper	15	CO	22	CO
Loggerhead Shrike	244	CO	267	CO

\*FE = Federally Endangered Species

\*FT = Federally Threatened Species

# North American Breeding Bird Survey

The primary goal of the atlas project was to document the distributional status of Illinois' breeding birds. Knowledge of species distribution, the quality and quantity of habitat, and population size and trends are important to understanding the status of wildlife populations and in guiding effective management strategies. The North American Breeding Bird Survey (BBS) was developed to address the need to understand avian population trends, particularly those of songbirds. Developed by Chandler S. Robbins and his colleagues at the U.S. Fish and Wildlife Service in the mid-1960s, the BBS is currently coordinated by the U.S. Geological Survey's Patuxent Wildlife Research Center and the Canadian Wildlife Service. At present the BBS program covers much of the United States and southern Canada and has expanded to include Alaska, northern Canada, and Mexico. The BBS is a primary source of population trend and distribution information for most species of North American birds and is the largest wildlife survey in the world.

The BBS is a large-scale, roadside survey of birds that began in 1966 with the primary objective of estimating population change for songbirds in North America. Randomly located permanent routes, each 24.5 miles in length with 50 census points located at 0.5-mile intervals, are the sampling unit. During a three-minute sampling period all birds seen or heard within a 0.25-mile radius of each point are recorded. Routes are surveyed once a year during the peak of the breeding season. The numbers of routes are distributed at densities varying from 1 to 16 routes per degree block of latitude and longitude depending upon their geographic location. Route densities have increased over time to help improve the precision of the annual indices of abundance and trend estimates. The methodology is described in detail by Robbins et al. (1986).

The BBS represents a unique attempt at measuring the breeding population of birds in North America and provides the most comprehensive information on regional avian population trends. There are, however, some limitations and biases associated with the BBS data and analyses. These problems have been discussed elsewhere (Bystrak 1981; Droege 1990; Peterjohn et al. 1995) but are mentioned here to inform the user of some of the potential problems that exist (U.S. Geological Survey 2002). Some of the problems and limitations involve the following:

- Variation in sampling frequency on a route (some routes are surveyed every year and others less frequently).
- Variation in the number of routes over time and geographic area.
- Variation in observer ability.

- Species with very localized distribution.
- Species with highly variable numbers detected from year to year.
- Species with low relative abundance.
- Species with small sample size (found on few routes or in few years).
- Species that specialize in habitats that are not adequately surveyed by BBS routes.
- Survey data biased towards roadside habitat and birds observed from roadways.
- Variation in results depending on analytical technique used to calculate trend estimate.

Some species or groups of species are not adequately surveyed by the BBS. Populations of many wetlands species, nocturnal species, colonial nesting species, waterfowl, birds of prey, upland game birds, secretive or inconspicuous species, early or late nesters, and species that inhabit the forest interior are not well monitored by the BBS.

The route-regression method is used by BBS researchers to analyze the data and produce estimates of population trends and annual indices of abundance. This method helps mitigate some of the problems associated with the data. Further details on route-regression analysis and trend estimates can be found in Geissler and Sauer (1990), Link and Sauer (1994), and Sauer et. al. (2001).

Terminology relating to the BBS data used in the atlas is briefly explained below. Some of the concepts are complex, and the reader is referred to the BBS website ([www.mp2-pwrc.usgs.gov/bbs/](http://www.mp2-pwrc.usgs.gov/bbs/)) and the many references listed therein for further information.

*Trend* is an estimate of population change over time expressed as percent change per year. To calculate trend estimates, the BBS uses the route-regression method in which trends are estimated for individual routes and regional trends are estimated as weighted averages of individual route trends. They are weighted to account for variability in the counts on the route, such as missing counts from years the route was not surveyed and observer changes. In general, positive trend estimates imply the population is increasing while negative estimates imply the population is decreasing, but the measures of reliability discussed below must be taken into account when interpreting the results.

*Probability (P)* is a measure to indicate whether the trend estimate is statistically significant. Probability values represent the percentage of times similar analyses will be different from the value shown. P values range from 0.00 to 1.00. For the atlas a P value of 0.05 (5%) was used as the

threshold for significance. Trend estimates with  $P < 0.05$  were considered statistically significant and those with  $P \geq 0.05$  were considered not statistically significant. The terms significant and nonsignificant are relative to the critical value of  $P < 0.05$ . Thresholds other than 0.05 are also commonly used. The  $P$  value is one measure of the reliability of the analysis results. Additional information, such as the 95% confidence intervals, sample size, relative abundance, and the credibility index, need to be considered when interpreting BBS results.

*Sample size (N)* is the number of survey routes used in the analysis.

*95% Confidence Intervals (95% CI)* are used as the limits where any value of the trend estimate would fall in any subsequent sample that was analyzed, which means that in any subsequent sample the estimate will lie within the maximum and minimum range in 95 out of 100 times. The CI provides information in addition to the  $P$  value to assess the reliability of the trend estimate. The width of the confidence interval generally indicates how precise the estimate is; relatively narrow intervals imply high precision.

*Relative Abundance (RA)* is a measure of the mean number of birds recorded for a route. It is expressed as average birds per route.

*Credibility Index (CR)* is an attribute assigned by the BBS researchers to their data to indicate potential problems with the trend estimate. The BBS data must be used with caution because of potential problems when estimating population change. Factors such as small sample size, low relative abundances on routes, relative abundance estimates which are highly variable from year to year, imprecise trends, and missing data need to be taken into account when interpreting BBS data. To identify data with potential problems, three credibility groups were established by BBS and they caution the user that results, even those classified in the highest category (CR 1), may not be valid (Sauer et al. 2001). This information has been incorporated into the atlas using the following system:

- Credibility Index 1 identifies data with at least 14 samples in the long term, of moderate precision, and of moderate abundance on routes (one or more birds per route).
- Credibility Index 2 includes data with a deficiency. The deficiencies include low abundance (less than 1.0 birds/route), small sample size (less than 14 routes for the long term), imprecise results (a 3%/year change would not be detected over the long term), or inconsistency in trends over time (e.g., the subinterval time-period trends are significantly different from each other based on a  $z$ -test).
- Credibility Index 3 includes data with a major deficiency. These include very low abundance (less

than 0.1 birds/route), small sample size (less than 5 routes for the long term, or less than 3 routes for the two subinterval time periods), or imprecise results (a 5%/year change would not be detected over the long term).

*Annual Indices of Abundance* are used to assess patterns in the data in the context of the trend estimates. Annual indices of abundance, which are depicted on the graphs included in the species accounts, are statistical values and do not represent the actual number of birds. They are calculated during the route-regression analysis. Using the regional trend estimate and a regional average count, a line is drawn that depicts the predicted trend in counts over time. Annual indices are defined in BBS as deviations from the regional predicted trend.

Because the data analysis and interpretation can be complicated, BBS scientists recommend that users become familiar with the information explaining the data and the limitations the data might have. The BBS website states that the data is provided “as is,” that errors may exist, and includes a data liability disclaimer. It is important for the reader to understand the data, the analytical results, and species’ biology when interpreting BBS information.

Information about the BBS and the trend data included in the atlas were obtained from the BBS website at [www.mp2-pwrc.usgs.gov/bbs/](http://www.mp2-pwrc.usgs.gov/bbs/) (Sauer et al. 2001) and from the scientists at the Patuxent Wildlife Research Center. The discussion of the BBS included in the atlas is intended to provide general information about the program. More detailed information can be found on the BBS website and from other sources.

### **The BBS in Illinois and Use of BBS Data in the Atlas**

BBS data included in the atlas is for the period 1966–2000. In Illinois, routes are generally surveyed in June. Sixty-four routes (4 per degree block) were sampled beginning in 1966 and the number was increased to 81 (5 per degree block) in 1993 (Fig. 9). Data for the upper Midwest is reported to give a regional perspective on population trends for species included in the atlas.

Information about population trends based on the BBS are summarized in the species accounts. The results of the BBS analysis are also graphically represented in the species accounts; the graphs show the trend line and annual indices of abundance for a species for Illinois and for the upper Midwest. Summary tables of the BBS data by species are included as Appendix G for Illinois and Appendix H for the upper Midwest (which is USFWS Region 3—Minnesota, Wisconsin, Michigan, Ohio, Indiana, Illinois, Iowa, and Missouri—in the BBS data) (Fig. 9). Not every species in a given region or time period is detected during the BBS survey in numbers adequate for trend estimation; consequently, not all species with accounts in the atlas have BBS data. If BBS data were available for a species, they were reported in the atlas. This includes species for which the



BBS may not be adequate and/or the reliability of the estimates is low, and therefore the user must use care when interpreting and using the data. The species accounts in the atlas include a brief discussion of population trends in Illinois and the upper Midwest based on the BBS data. In the accounts, the following terminology, abbreviations, and symbols are used:

Significant	Statistically significant, P value < 0.05
Not significant or nonsignificant	Statistically not significant, P value ≥ 0.05
IL	Illinois
UM	Upper Midwest region
Low relative abundance	Relative abundance < 0.1
Small sample size	N < 14
>, <, ≥, and ≤	greater than, less than, greater than or equal to, and less than or equal to, respectively

### **Trends in Avian Populations in Illinois: A Discussion of the Breeding Bird Survey Data from 1966 to 2000 for Illinois**

The data collected for the BBS in Illinois for the period 1966–2000 provide valuable and unique information about trends, or changes over time, in populations of bird species that breed in the state. Of the 183 species detected or considered likely to be breeding in the state during the atlas project, the BBS reported trend estimates for 133 (73%) species. BBS data for the 133 species is summarized in Table 9. During the period 1966–2000, 17% (22 species) had significantly negative trend estimates and 20% (26 species) had significantly positive trend estimates (Table 9). The remaining 85 species (64%) had nonsignificant trend estimates.

The BBS limits its summary of results to species detected on 14 or more routes surveywide, which eliminates species with perhaps too small a sample size to adequately evaluate trends. Of the 100 species found on 14 or more routes in Illinois, 20% (20 species) had significantly negative trend estimates and 25% (25 species) had significantly positive trend estimates from 1966 to 2000 (Tables 9 and 10). The trend estimates were nonsignificant for the remaining 55 species (55%). BBS data for the 100 species found on 14 or more routes is summarized in Table 10.

Using the credibility index (CR) to summarize the data is another way to assess the reliability of overall trends. Credibility indices for the 133 species with BBS trends were distributed as follows: 26% (34 species) had a CR of 1, 41% (55 species) had a CR of 2, and 33% (44 species) had a CR

of 3. For species with significantly negative trend estimates, 8% (10 species) of the total number of species (133) had a CR of 1, 8% (10 species) had a CR of 2, and 2% (2 species) had a CR of 3. For species with significantly positive trend estimates, 8% (10 species) of the total number of species (133) had a CR of 1, 8% (11 species) had a CR of 2, and 4% (5 species) had a CR of 3.

BBS trend estimates were not reported for 50 of the 183 species with accounts in the atlas. This group includes species that are rare, localized, nocturnal, or associated with habitats that were poorly sampled by the BBS routes.

The discussion in this section includes species with reported BBS trend estimates for Illinois regardless of their credibility indices. Interpretation of the BBS data can be complex, and readers should understand the limitations and biases of the data when interpreting the BBS data presented in the atlas.

### ***Breeding Guilds***

Species groupings by habitat are increasingly being used to identify groups of species needing management and conservation consideration. A summary of population trends by breeding guilds, that is, groups of species that use similar habitat for breeding, is presented in Tables 9 and 10. The 133 species with BBS trend estimates are classified into five primary breeding habitat categories—woodland, grassland, successional/shrub, urban, and wetland—based on the classification used by the BBS (Peterjohn and Sauer 1993). The “other” category consists of species that are difficult to categorize, including generalists that fit equally well in multiple categories and specialists that do not fit well into one of these other categories.

The following summary refers to trends for 1966–2000 and is limited to the 100 species recorded on 14 or more routes in Illinois (Tables 9 and 10). The percentage of the total number of species (100) in each breeding guild is as follows: 28% woodland, 10% grassland, 19% successional/scrub, 13% urban, 8% wetland, and 22% other.

- **Woodland.** Twenty-eight species are included in this group. Eleven, or approximately one-third, of the species in this group had negative trend estimates, one of which was significantly negative, for the period 1966–2000. Of the 17 species with positive trend estimates, 6 species (21% of the species in the woodland group) had significantly positive trend estimates from 1966 to 2000.
- **Grassland.** Of the 10 grassland species, 9 had negative trend estimates including 6 that had significantly negative estimates for 1966–2000. One of the nine species with negative trend estimates is the Ring-necked Pheasant, which is a non-native species introduced into Illinois in the early 1900s. One species had a positive trend estimate and that was not significant. Grassland-dependent birds are in serious decline in the state. Species that were once historically abundant in Illinois, such as the Greater Prairie-Chicken, Northern Harrier, Short-eared Owl, and Upland Sandpiper,



**Table 9. Summary of North American Breeding Bird Survey trend information for Illinois for 1966–2000.** The table includes the 133 species that have both a species account in the atlas and BBS trend estimates. Species are grouped into primary breeding guilds and two trend categories—those with negative and those with positive trend estimates. Significant and nonsignificant are defined as  $P < 0.05$  and  $P \geq 0.05$ , respectively. Species names are followed by the BBS trend estimate (% change/year), the probability value (P), and credibility index in parentheses, and the migration status (n = neotropical migrant, s = short distance migrant, and r = permanent resident). Species observed on less than 14 routes are indicated by [ ] and listed at the end of the category. The reader should refer to the information on data limitations and interpretation in the text and the individual species accounts. The source of the data is Sauer et al. 2001.

Breeding Habitat	Negative Trend Estimate	Positive Trend Estimate
Woodland	<p>Significant</p> <p>Yellow-billed Cuckoo (-2.9, &lt;0.01, 2) n</p> <p>[American Redstart(-8.1, 0.03, 3)] n</p> <p>Nonsignificant</p> <p>Black-billed Cuckoo (-3.6, 0.32, 2) n</p> <p>Whip-poor-will (-9.6, 0.08, 3) n</p> <p>Downy Woodpecker (0.0, 0.99, 1) r</p> <p>Eastern Wood-Pewee (0.0, 0.97, 1) n</p> <p>Acadian Flycatcher (-2.1, 0.20, 2) n</p> <p>Great Crested Flycatcher (-0.5, 0.34, 1) n</p> <p>Red-eyed Vireo (-0.1, 0.93, 2) n</p> <p>Carolina Chickadee (-0.8, 0.48, 1) r</p> <p>Wood Thrush (-1.3, 0.29, 2) n</p> <p>Scarlet Tanager (-2.5, 0.40, 2) n</p> <p>[Red-shouldered Hawk (-0.6, 0.88, 3)] s</p> <p>[Eastern Screech-Owl (-3.0, 0.78, 3)] r</p> <p>[Chuck-will's-widow (-16.5, 0.12, 3)] n</p> <p>[Least Flycatcher (-1.0, 0.85, 3)] n</p> <p>[Cerulean Warbler (-12.6, 0.35, 3)] n</p> <p>[Ovenbird (-16.5, 0.16, 3)] n</p>	<p>Significant</p> <p>Wild Turkey (26.1, &lt;0.01, 3) r</p> <p>Pileated Woodpecker (7.1, &lt;0.01, 2) r</p> <p>Red-bellied Woodpecker (1.7, &lt;0.01, 2) r</p> <p>Warbling Vireo (2.5, 0.01, 1) n</p> <p>Tufted Titmouse (2.0, &lt;0.01, 1) r</p> <p>White-breasted Nuthatch (4.1, &lt;0.01, 1) r</p> <p>Nonsignificant</p> <p>Barred Owl (0.3, 0.86, 3) r</p> <p>Ruby-throated Hummingbird (4.7, 0.11, 2) n</p> <p>Hairy Woodpecker (0.6, 0.56, 2) r</p> <p>Yellow-throated Vireo (2.2, 0.15, 2) n</p> <p>Black-capped Chickadee (2.0, 0.18, 1) r</p> <p>Blue-gray Gnatcatcher (1.6, 0.43, 2) n</p> <p>Northern Parula (2.7, 0.31, 2) n</p> <p>Prothonotary Warbler (0.3, 0.79, 2) n</p> <p>Kentucky Warbler (0.6, 0.73, 2) n</p> <p>Summer Tanager (3.3, 0.18, 2) n</p> <p>Rose-breasted Grosbeak (2.9, 0.08, 2) n</p> <p>[Worm-eating Warbler (4.6, 0.66, 3)] n</p>
Grassland	<p>Significant</p> <p>Horned Lark (-1.0, 0.01, 1) s</p> <p>Savannah Sparrow (-6.0, 0.01, 2) s</p> <p>Grasshopper Sparrow (-7.0, &lt;0.01, 1) s</p> <p>Dickcissel (-3.5, &lt;0.01, 2) n</p> <p>Bobolink (-9.3, &lt;0.01, 1) n</p> <p>Eastern Meadowlark (-2.3, 0.01, 2) s</p> <p>Nonsignificant</p> <p>Ring-necked Pheasant (-2.0, 0.34, 2) r</p> <p>Vesper Sparrow (-0.6, 0.19, 1) s</p> <p>Western Meadowlark (-2.3, 0.59, 2) s</p>	<p>Significant</p> <p>None</p> <p>Nonsignificant</p> <p>Sedge Wren (2.3, 0.67, 3) s</p> <p>[Northern Harrier (3.4, 0.70, 3)] s</p> <p>[Upland Sandpiper (8.3, 0.15, 3)] n</p>
Successional/Scrub	<p>Significant</p> <p>Northern Bobwhite (-1.9, &lt;0.01, 2) r</p> <p>Brown Thrasher (-0.9, 0.01, 1) s</p> <p>Yellow-breasted Chat (-3.4, &lt;0.01, 1) n</p> <p>Field Sparrow (-3.0, &lt;0.01, 1) s</p> <p>Indigo Bunting (-1.0, &lt;0.01, 2) n</p> <p>Nonsignificant</p> <p>Willow Flycatcher (-1.0, 0.39, 2) n</p> <p>White-eyed Vireo (-1.8, 0.23, 2) n</p> <p>Bell's Vireo (-1.3, 0.66, 2) n</p> <p>Common Yellowthroat (-0.6, 0.16, 1) n</p> <p>Eastern Towhee (-1.2, 0.33, 2) s</p> <p>Lark Sparrow (-6.9, 0.06, 2) s</p> <p>American Goldfinch (-0.5, 0.56, 2) r</p> <p>[American Woodcock (-2.7, 0.82, 3)] s</p> <p>[Bewick's Wren (-13.9, 0.17, 3)] s</p> <p>[Prairie Warbler (-6.6, 0.50, 3)] n</p>	<p>Significant</p> <p>Carolina Wren (5.1, &lt;0.01, 2) r</p> <p>House Wren (1.6, 0.02, 1) n</p> <p>Yellow Warbler (6.3, &lt;0.01, 2) n</p> <p>[Blue-winged Warbler (42.2, &lt;0.01, 3)] n</p> <p>Nonsignificant</p> <p>Gray Catbird (0.7, 0.12, 2) n</p> <p>Song Sparrow (0.1, 0.82, 2) s</p> <p>Northern Cardinal (0.6, 0.18, 1) r</p> <p>Blue Grosbeak (1.7, 0.39, 2) n</p>

**Table 9 (Continued).**

Breeding Habitat	Negative Trend Estimate	Positive Trend Estimate
Urban	<p>Significant</p> <p>Chimney Swift (-2.5, &lt;0.01, 2) n</p> <p>Blue Jay (-1.0, 0.04, 1) s</p> <p>Purple Martin (-3.3, &lt;0.01, 1) n</p> <p>Northern Mockingbird (-2.6, &lt;0.01, 2) r</p> <p>House Sparrow (-2.6, &lt;0.01, 2) r</p> <p>Nonsignificant</p> <p>Rock Pigeon (-1.0, 0.14, 2) r</p> <p>European Starling (0.0, 0.96, 1) r</p> <p>Common Grackle (-0.4, 0.54, 1) s</p>	<p>Significant</p> <p>American Robin (2.9, &lt;0.01, 1) s</p> <p>Chipping Sparrow (8.0, &lt;0.01, 1) n</p> <p>House Finch (23.0, &lt;0.01, 3) r</p> <p>Nonsignificant</p> <p>Mourning Dove (0.5, 0.37, 2) s</p> <p>Eurasian Tree Sparrow (6.7, 0.18, 2) r</p>
Wetland	<p>Significant</p> <p>[Swamp Sparrow (-4.9, &lt;0.01, 3)] s</p> <p>Nonsignificant</p> <p>Red-winged Blackbird (-0.3, 0.62, 1) s</p> <p>[Blue-winged Teal (-5.9, 0.08, 3)] s</p> <p>[Yellow-crowned Night-Heron (-3.7, 0.32, 3)] n</p> <p>[Marsh Wren (-4.0, 0.05, 3)] n</p>	<p>Significant</p> <p>Mallard (4.9, 0.02, 1) s</p> <p>Great Blue Heron (13.5, &lt;0.01, 2) s</p> <p>Great Egret (13.9, 0.03, 3) s</p> <p>Canada Goose (28.8, &lt;0.01, 3) r</p> <p>Belted Kingfisher (5.9, &lt;0.01, 2) s</p> <p>Nonsignificant</p> <p>Wood Duck (5.1, 0.05, 2) s</p> <p>Green Heron (1.5, 0.22, 2) n</p> <p>[Pied-billed Grebe (6.3, 0.60, 3)] s</p> <p>[Double-crested Cormorant (49.4, 0.15, 3)] s</p> <p>[Little Blue Heron (0.4, 0.96, 3)] s</p> <p>[Cattle Egret (8.5, 0.14, 3)] s</p> <p>[Black-crowned Night-Heron (12.3, 0.20, 3)] s</p> <p>[Spotted Sandpiper (5.4, 0.70, 3)] n</p> <p>[Ring-billed Gull (36.4, 0.21, 3)] s</p> <p>[Herring Gull (3.0, 0.33, 3)] s</p>
Other	<p>Significant</p> <p>Red-headed Woodpecker (-2.8, &lt;0.01, 2) s</p> <p>Northern Flicker (-2.6, &lt;0.01, 1) s</p> <p>Eastern Kingbird (-2.2, &lt;0.01, 1) n</p> <p>Nonsignificant</p> <p>Common Nighthawk (-9.9, 0.10, 3) n</p> <p>Loggerhead Shrike (-4.5, 0.10, 2) s</p> <p>[Gray Partridge (-7.8, 0.42, 3)] r</p> <p>[Black Vulture (-15.5, 0.74, 3)] r</p>	<p>Significant</p> <p>Red-tailed Hawk (11.1, &lt;0.01, 2) s</p> <p>American Kestrel (7.6, 0.01, 2) s</p> <p>Killdeer (8.1, &lt;0.01, 1) s</p> <p>Eastern Phoebe (4.3, &lt;0.01, 2) s</p> <p>American Crow (1.7, 0.03, 1) r</p> <p>N. Rough-winged Swallow (4.5, &lt;0.01, 2) n</p> <p>Eastern Bluebird (3.8, &lt;0.01, 2) s</p> <p>Cedar Waxwing (10.3, &lt;0.01, 1) s</p> <p>Nonsignificant</p> <p>Turkey Vulture (25.7, 0.07, 3) s</p> <p>Great Horned Owl (3.5, 0.07, 2) r</p> <p>Tree Swallow (5.2, 0.32, 3) s</p> <p>Bank Swallow (0.5, 0.85, 1) n</p> <p>Cliff Swallow (28.3, 0.11, 3) n</p> <p>Barn Swallow (0.7, 0.17, 2) n</p> <p>Brown-headed Cowbird (1.1, 0.05, 1) s</p> <p>Orchard Oriole (0.1, 0.87, 1) n</p> <p>Baltimore Oriole (0.8, 0.19, 2) n</p> <p>[Cooper's Hawk (0.3, 0.91, 3)] s</p> <p>[Fish Crow (10.1, 0.59, 3)] s</p> <p>[Yellow-throated Warbler (2.5, 0.63, 3)] n</p> <p>[Pine Warbler (6.9, 0.30, 3)] s</p> <p>[Louisiana Waterthrush (24.2, 0.07, 3)] n</p>

have dramatically declined in response to the changes in the landscape (Herkert et al. 1993). In recent years the populations of some species, such as the Grasshopper Sparrow and Bobolink, that are currently considered fairly common in Illinois are suffering substantial declines (Herkert et al. 1993).

- **Successional/scrub.** Of the 19 species in this group, approximately two-thirds of the species (12 species) had negative trend estimates, 5 (26%) of which were significantly negative from 1966 to 2000. Of the seven species with positive trend estimates, three (16%) had significant trend estimates.
- **Urban.** The urban breeding guild is composed of 13 species. Of the eight species with negative trends, five (38% of the species in the urban group) had significantly negative trend estimates from 1966 to 2000. Of the five species with positive trend estimates, three (23%) had significant positive trend estimates from 1966 to 2000. Five of the species in the urban group are not native to Illinois.
- **Wetland.** Of this group of eight species, five species had significantly positive trend estimates for 1966–2000. The BBS does not adequately survey most wetlands species; most species in this group were found in low numbers and on few routes.

### Migration Status

A summary of population trends by migration class is presented in Table 10. Species were classified in one of three groups: Neotropical migrants, short-distance migrants, and permanent residents. Some species were difficult to classify; for example, the Canada Goose can be both a permanent resident and a short-distance migrant in Illinois. The summary table and the following discussion refer to trends from 1966 to 2000 and are limited to the 100 species recorded on 14 or more routes.

Of the 100 species included in this summary, 42 (42%) are classified as Neotropical migrants, 34 (34%) are short-distance migrants, and 24 (24%) are permanent residents.

- **Neotropical Migrants.** This long-distance migrant group includes 42 species that winter primarily in the American tropics. Twenty-one species, or half of the species in this group, have negative trend estimates for 1966–2000, eight of which were significantly negative. Of the 21 species with positive trend estimates, the estimates were significant for five species.
- **Short-distance Migrants.** Of the 34 species in this group, approximately half (16 species) had negative trend estimates, 9 of which were significantly negative. Among the 18 species with positive trend estimates, 11 had significantly positive trend estimates for the period 1966–2000.
- **Permanent Residents.** Twenty-four species are included in this group. Of the nine species with negative trend estimates, three were significantly negative. Positive trends were estimated for 15 species, 9 of which were significant.

**Table 10. Summary of North American Breeding Bird Survey trend information by breeding guilds and migration groups for Illinois based on data for 1966–2000. The information in the table is limited to species encountered on 14 or more routes. Significance is defined as  $P < 0.05$ .**

			Negative Trend Estimates		Positive Trend Estimates	
	Total # of Species	# of Species with Significant Trends	Total # of Species	# of Species with Significant Trends	Total # of Species	# of Species with Significant Trends
<b>Breeding Guild</b>						
Woodland	28	7	11	1	17	6
Grassland	10	6	9	6	1	0
Successional/scrub	19	8	12	5	7	3
Urban	13	8	8	5	5	3
Wetland	8	5	1	0	7	5
Other	22	11	5	3	17	8
<b>Migration Class</b>						
Neotropical migrant	42	13	21	8	21	5
Short-distance migrant	34	20	16	9	18	11
Resident	24	12	9	3	15	9
<b>Total</b>	100	45	46	20	54	25

# Physical Environment of Illinois

Illinois covers approximately 56,000 square miles (36 million acres) and extends about 380 miles from north to south and 210 miles from east to west at its widest point. Three rivers—the Mississippi on the west, the Ohio to the south, and the Wabash to the southeast—form much of the state boundary (Fig. 10).

Because of diverse geologic history, climate, soils, and topography, a variety of habitats exist in the state, including forests, savannas, grasslands, wetlands, streams, lakes, and ponds. Most of the state is relatively flat as a result of glacial advances and retreats that scoured the landscape and deposited materials. The areas with the greatest topographic relief occur mainly in the unglaciated northwestern and southern parts of the state and along the major rivers. Glacial activity created many unique wetlands, glacial moraines, and natural lakes in the northeastern part of the state.

Fourteen Natural Divisions are recognized in Illinois, based on differences in topography, glacial history, bedrock, soils, and distribution of plants and animals (Schwegman et al. 1973) (Fig. 11). Ninety-three distinct natural community types occur within the natural divisions, many of which exist today as small relics or in a degraded condition (White 1978).

Before Euro-American settlement, the area that became Illinois contained a mosaic of natural habitat (Fig. 12). In less than two centuries, the vast grasslands, forests, and wetlands have been transformed piece by piece to crop fields and urbanized areas. Illinois now ranks 49th among the states in amount of intact natural land (Newman et al. 2003).

The Public Land Survey maps created for the U.S. General Land Office (GLO) from 1804 to 1856 provide the best available estimates of the extent of certain land cover types prior to large-scale settlement of Illinois (Table 11). In the early to mid-1800s, 54% of the state was mapped as prairie (Suloway et al. 2002). The rich soils of the prairies, along with the development of a transportation system to take the grain and other products to market, contributed to their rapid conversion to farmland in a relatively short period of time, roughly from 1840 to 1900. Only 2,352 acres (0.01% of the original prairie) of high-quality native prairie remained by 1978 (White 1978). In the early to mid-1800s, forest occupied about 41% of the state according to the Public Land Survey. Currently forest covers about 13% of the state (11% upland forest and 2% forested wetland, Table 12). Iverson et al. (1989) estimated that 19% of the original forests that existed in the state in 1820 remain, with most being converted to agriculture.

Based on hydric soils estimates, which are a better source than the Public Land Survey maps for approximating the extent of presettlement wetlands, about 23% of the surface area of the state was covered by wetlands in the early

1800s (Havera and Suloway 1994). As a result of human modification of the land, dramatic declines in wetlands have occurred; it is conservatively estimated that 90% of the state's wetlands have been destroyed. According to the National Wetlands Inventory, wetlands occupied 3.5% of the surface area of the state by the 1980s (Suloway and Hubbell 1994).

At the time the atlas project was conducted, the dominant land cover was cropland (primarily corn and soybeans with some small grains), which covered approximately 60% of the land area (Luman et al. 1996) (Table 12, Fig. 13). The remaining major land cover types in the 1990s were rural grassland at 17%, forest at 11%, urban at 6% (Fig. 15), wetland at 3% (Fig. 16), and open water at 2% (Fig. 10). Illinois has a population of about 12 million people. Urban land continues to grow at a rapid pace. During the period 1960–1990, the population in northeastern Illinois (Cook, DuPage, Kane, Lake, McHenry, and Will counties) grew by 14% while its urbanized area expanded 66% (Campaign for Sensible Growth 1999).

Not only has the quantity of available habitat declined but so has the quality. Fragmentation, invasion of non-native plant species, siltation, pollution, the presence of humans, and inadequate management are some of the factors that degrade habitats. Fragmentation of larger tracts into smaller ones creates islands of habitat. The increase in the proportion of edge to interior area creates opportunities for nest parasitism (e.g., Brown-headed Cowbirds in forest edge) and nest predation, and favors species that can successfully utilize edge habitat. Wetland communities have declined in quality and productivity due to modification of the natural hydrological regimes, increased silt deposition, non-native species invasion (e.g., purple loosestrife and common reed), and excessive nutrient and chemical runoff from agricultural and

**Table 11. Land cover of Illinois in the early 1800s. The data are based on a digital version of Public Land Survey maps of the U.S. General Land Office (Suloway et al. 2002).**

Land Cover Type	Acreage	% of Area
Prairie	19,463,578	54.0
Forest	14,686,388	40.7
Water	768,023	2.1
Bottomland	394,213	1.1
Wet prairie	223,468	0.6
Swamp	218,448	0.6
Cultural	109,318	0.3
Marsh	64,792	0.2
Topographic/geographic	55,064	0.2
Barrens	41,575	0.1
Slough	24,243	<0.1
Other wetland	11,934	<0.1
Total	36,061,052	100.0

urban areas. Based on the National Wetlands Inventory data, the average size of a wetland complex is 5.6 acres and 93% of wetland complexes are less than 10 acres. Lack of disturbance factors, such as fire or timber harvest, has limited creation and maintenance of early successional habitats that many species require. Forest communities that have changed from open to closed canopy provide fewer habitats for savanna-dependent species.

Agricultural practices and policies have had major impacts on the avian fauna of Illinois. The initial conversion of the land to agricultural use that coincided with Euro-American settlement dramatically reduced the amount of forest, grassland, and wetlands in Illinois by the late 1800s.

Prior to the mid-1900s, farming operations tended to be a mosaic of grain fields, hay, and pastures with remnant grasslands between fields and in areas less suitable for agriculture. In the mid-1900s farming practices began changing to monoculture crop production (mainly corn and soybeans), with increased pesticide and fertilizer use, and roadside-to-roadside row crop production, which eliminated fencerows and windbreaks. Agricultural conservation practices applied to cropping, mowing, or grazing, and conversion of cropland to grassland or forest, (e.g., the Conservation Reserve Program) provide new habitat and may have positive impacts on the populations of some species.

**Table 12. Land cover of Illinois in the 1990s. The data are based on classification of satellite imagery (Luman et al. 1996).**

Land Cover Type	Acreage	% of Area
Cropland and other Agricultural Land	27,928,797	77.45
Row Crop	19,584,247	54.31
Small Grains	2,026,268	5.62
Grassland (pasture, right-of-ways, hay)	6,302,371	17.48
Orchard and Nurseries	15,911	0.04
Forest and Woodland	4,088,623	11.34
Deciduous, Close Canopy	3,595,538	9.97
Deciduous, Open Canopy	421,013	1.17
Conifer (undifferentiated pine)	72,072	0.20
Urban	2,087,396	5.79
High and Medium Density	891,311	2.47
Low Density (residential mixed with open space)	251,180	0.70
Transportation	314,866	0.87
Urban Grassland	630,038	1.75
Wetland	1,170,550	3.24
Shallow Marsh/Wet Meadow	140,664	0.39
Deep Marsh	34,855	0.10
Swamp	11,726	0.03
Forested	808,987	2.24
Open Water, Shallow	174,318	0.48
Open Water, deep (lakes, streams)	770,183	2.14
Other Land		
Barren and Exposed (quarries)	16,178	0.04
Total	36,061,727	100.00

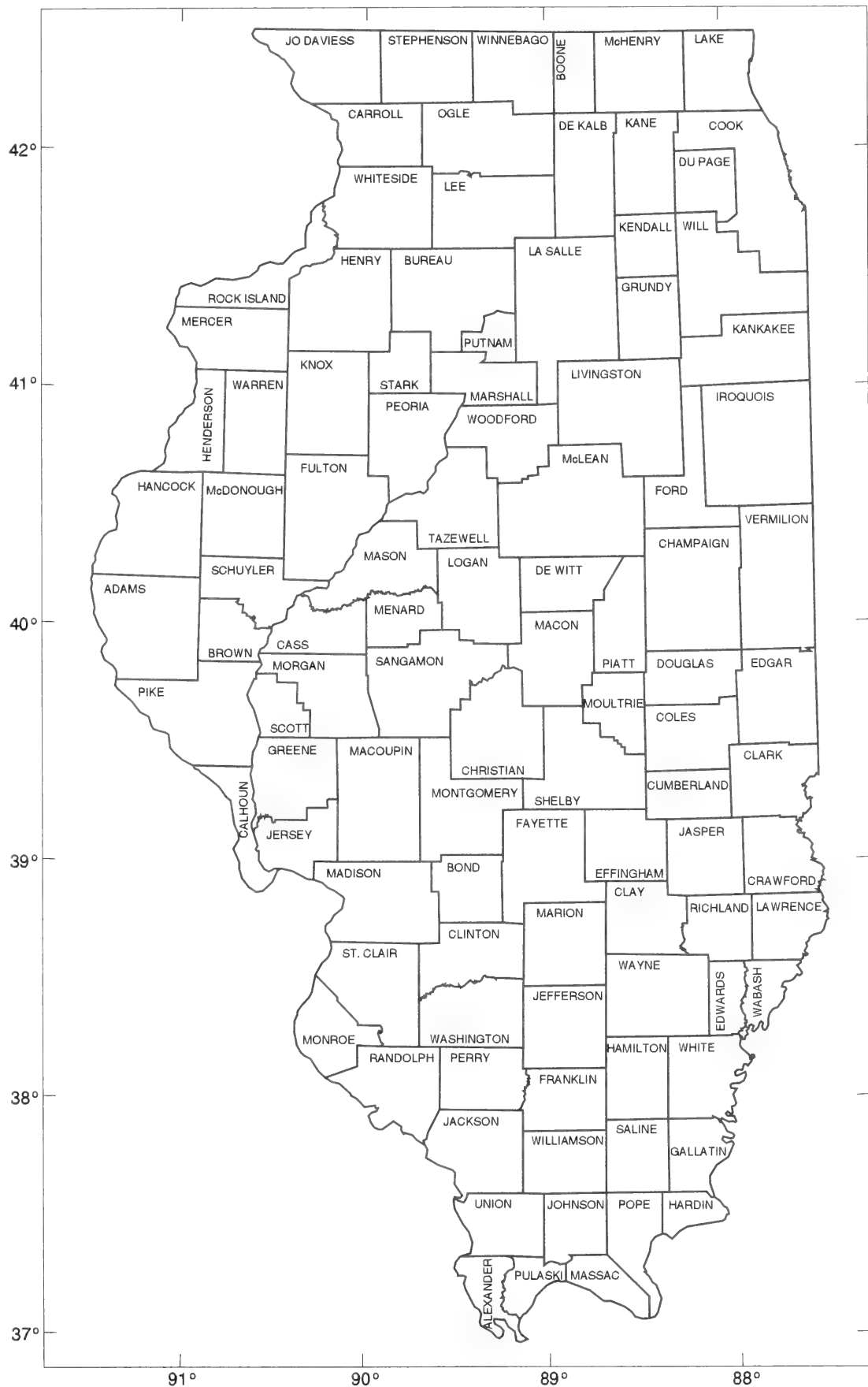


Figure 1. Counties in Illinois. Degrees of latitude and longitude are indicated.

## Data Collection

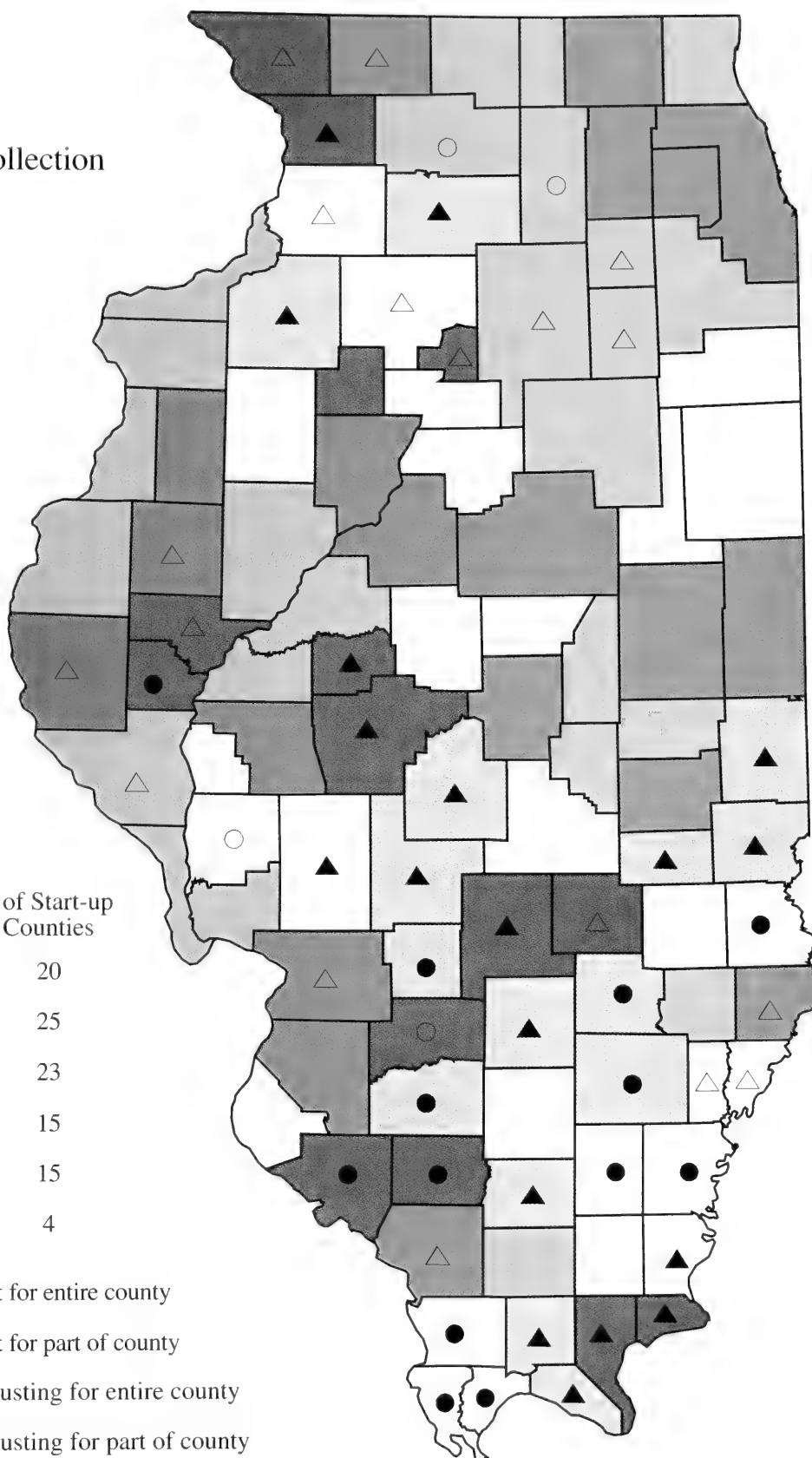
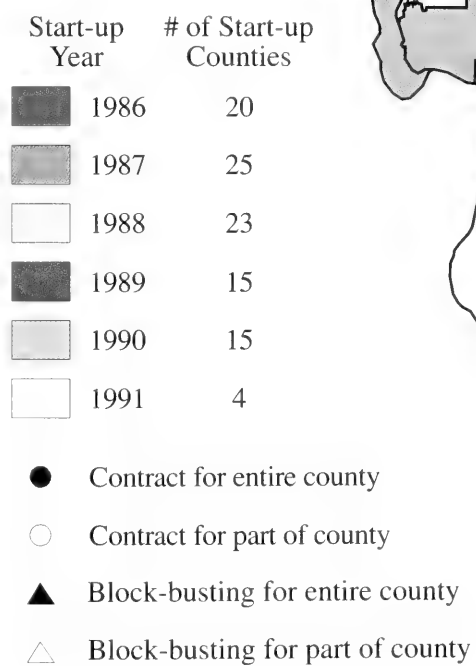


Figure 2. Start-up year, contracts, and block-busting efforts by county.

## Identification System for Blocks

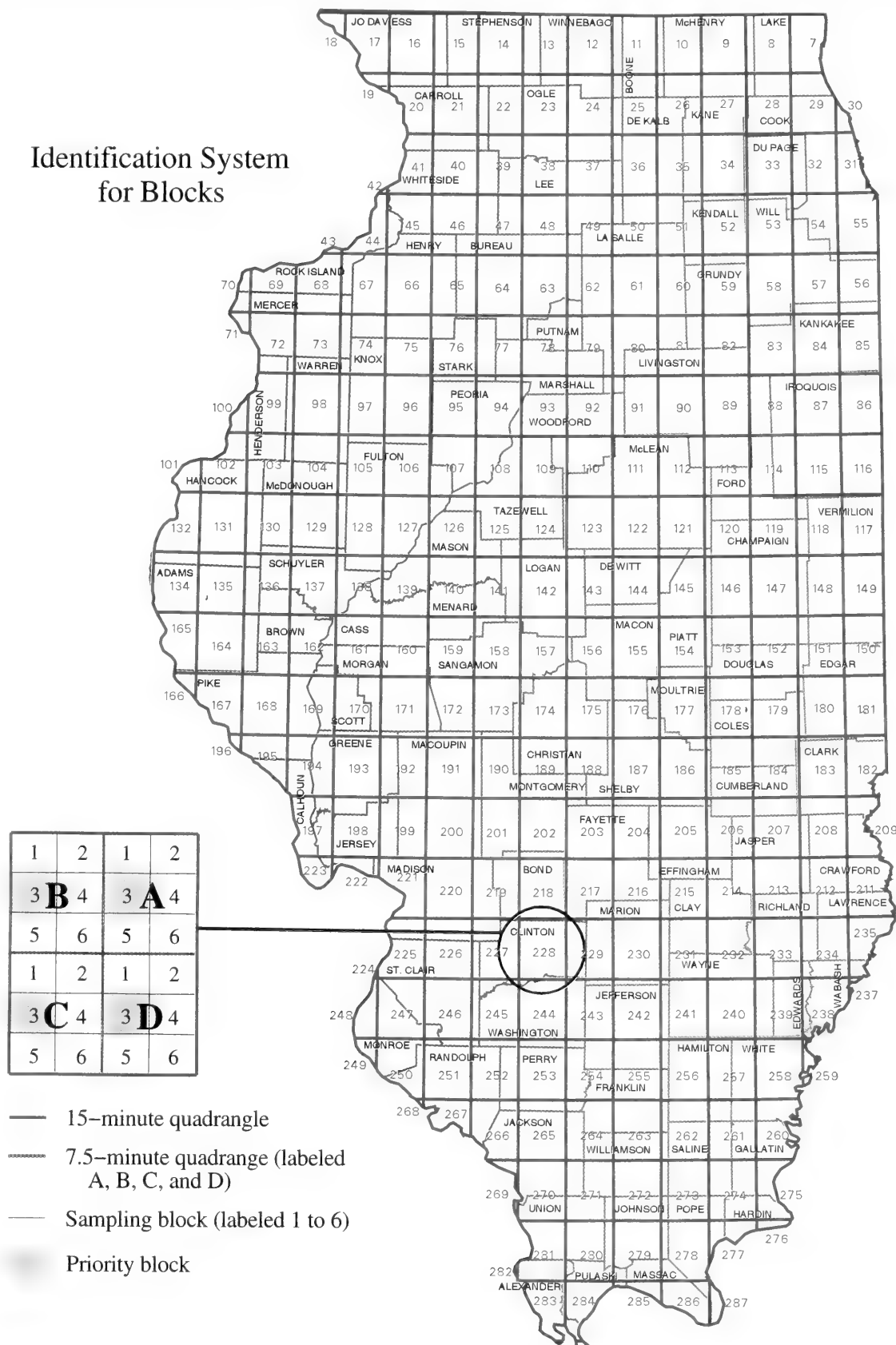


Figure 3. The system for identifying atlas blocks based on USGS quadrangle maps. A block is identified by a code consisting of the 3-digit number for the 15-minute quadrangle (statewide map), the letter code for the 7.5-minute quadrangle (A, B, C, and D on inset map), and the 1-digit number for the block (1 to 6 on inset map). For example, the code for the priority block for the lower left 7.5-minute quadrangle on the inset map is 228C3.





## PRINCIPLE OBSERVER

**IMPORTANT - PLEASE READ** 1. Transfer data from field data sheets to this form. 2. Please use dark pencil when filling out this form. 3. Before submitting this form to the County Coordinator, sum the number of OB, PO, PR, and CO species and enter at bottom of form. 4. Fill in the time spent in the block on the back of this form.

## ILLINOIS BREEDING BIRD ATLAS PROJECT

Name \_\_\_\_\_  
Address \_\_\_\_\_ Zip \_\_\_\_\_  
Phone \_\_\_\_\_  
☐ Check box if new address

☐ Check box if this is an update of a report from a previous year (if checked, please use this form for new and upgraded information only)

NAME	8 11	12 13 OB	12 13 PO	12 13 PR	12 13 CO
Grebe, Pied-billed	PBGR	1	2	3	
Eared *	EAGR	1	2	3	
Cormorant, Double-cr	DCCO	1	2	3	
Bittern, American	AMBI	1	2	3	
Least	LEBI	1	2	3	
Heron, Great Blue	GBHE	1	2	3	
Egret, Great	GREG	1	2	3	
Snowy *	SNEG	1	2	3	
Heron, Little Blue *	LBHE	1	2	3	
Egret, Cattle	CAEG	1	2	3	
Heron, Green-backed	GRHE	1	2	3	
Night-Heron, Blk-cr *	BCNH	1	2	3	
Yellow-crowned *	YCNH	1	2	3	
Swan, Mute	MUSW	1	2	3	
Goose, Canada	CAGO	1	2	3	
Duck, Wood	WODU	1	2	3	
Mallard	MALL	1	2	3	
Pintail, Northern *	NOPI	1	2	3	
Teal, Blue-winged	BWTE	1	2	3	
Shoveler, Northern *	NOSH	1	2	3	
Merganser, Hooded *	HOME	1	2	3	
Duck, Ruddy *	RUDU	1	2	3	
Vulture, Black *	BLVU	1	2	3	
Turkey	TUVU	1	2	3	
Kite, Mississippi *	MIKI	1	2	3	
Eagle, Bald *	BAEA	1	2	3	
Harrier, Northern *	NOHA	1	2	3	
Hawk, Sharp-shinned *	SSHA	1	2	3	
Cooper's *	COHA	1	2	3	
Red-shouldered *	RSHA	1	2	3	

NAME	8 11	12 13	12 13	12 13	12 13
	OB	PO	PR	CO	
Hawk, Broad-winged	BWHA	1	2	3	
Swainson's *	SWHA	1	2	3	
Red-tailed	RTHA	1	2	3	
Kestrel, American	AMKE	1	2	3	
Partridge, Gray	GRPA	1	2	3	
Pheasant, Ring-necked	RNPH	1	2	3	
Turkey, Wild	WITU	1	2	3	
Bobwhite, Northern	NOBO	1	2	3	
Rail, King *	KIRA	1	2	3	
Virginia *	VIRA	1	2	3	
Sora *	SORA	1	2	3	
Moorhen, Common *	COMO	1	2	3	
Coot, American	AMCO	1	2	3	
Crane, Sandhill *	SACR	1	2	3	
Killdeer	KILL	1	2	3	
Sandpiper, Spotted	SPSA	1	2	3	
Upland *	UPSA	1	2	3	
Snipe, Common *	COSN	1	2	3	
Woodcock, American	AMWO	1	2	3	
Phalarope, Wilson's *	WIPI	1	2	3	
Gull, Ring-billed	RBGU	1	2	3	
Herring *	HEGU	1	2	3	
Tern, Common *	COTE	1	2	3	
Forster's *	FOTE	1	2	3	
Black *	BLTE	1	2	3	
Dove, Rock	RODO	1	2	3	
Mourning	MODO	1	2	3	
Cuckoo, Black-billed	BBCU	1	2	3	
Yellow-billed	YBCU	1	2	3	
Barn-Owl, Common *	CBOW	1	2	3	

NAME	8	11	12	13	12	13	12	13	12	13
			OB		PO		PR		CO	
Screech-Owl, Eastern	ESOW		1		2		3			
Owl, Great Horned	GHOW		1		2		3			
Barred	BAOW		1		2		3			
Long-eared	* LEOW		1		2		3			
Short-eared	* SEOW		1		2		3			
Nighthawk, Common	CONI		1		2		3			
Chuck-will's-widow	CWWI		1		2		3			
Whip-poor-will	WPWI		1		2		3			
Swift, Chimney	CHSW		1		2		3			
Hummingbird, Ruby-thr	RTHU		1		2		3			
Kingfisher, Belted	BEKI		1		2		3			
Woodpecker, Red-headed	RHWO		1		2		3			
Red-bellied	RBWO		1		2		3			
Downy	DOWO		1		2		3			
Hairy	HAWO		1		2		3			
Flicker, Northern	NOFL		1		2		3			
Woodpecker, Pileated	PIWO		1		2		3			
Wood-Pewee, Eastern	EWPE		1		2		3			
Flycatcher, Acadian	ACFL		1		2		3			
Alder	* ALFL		1		2		3			
Willow	WIFL		1		2		3			
Least	* LEFL		1		2		3			
Phoebe, Eastern	EAPH		1		2		3			
Flycatcher, Great Crested	G CFL		1		2		3			
Kingbird, Western	* WEKI		1		2		3			
Eastern	EAKI		1		2		3			
Lark, Horned	HOLA		1		2		3			
Martin, Purple	PUMA		1		2		3			
Swallow, Tree	TRSW		1		2		3			
Northern Rough-winged	NRWS		1		2		3			

\* written details (Verification Report) required. (County coordinator must submit approval, in writing, for all \* species not documented)

OB = OBSERVED	NO. OF OBSERVED	NO. OF POSSIBLE	NO. OF PROBABLE	NO. OF CONFIRMED
PO = POSSIBLE				
PR = PROBABLE				
CO = CONFIRMED				

TOTAL			RETURN THIS DATA FORM TO YOUR COUNTY COORDINATOR BY AUGUST 15

RETURN THIS DATA FORM TO YOUR  
COUNTY COORDINATOR BY AUGUST 15

**(Reverse side)**

☐ Approved by County Coordinator  
☐ Key Punched  
☐ Copied

BLOCK 

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 YEAR 19 

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NAME	8	11	12	13	12	13	12	13
	OB	PO	PR	CO				
Swallow, Bank	BKSW	1	2	3				
Cliff	CLSW	1	2	3				
Barn	BASW	1	2	3				
Jay, Blue	BLJA	1	2	3				
Crow, American	AMCR	1	2	3				
Fish	* FICR	1	2	3				
Chickadee, Black-capped	BCCH	1	2	3				
Carolina	CACH	1	2	3				
Titmouse, Tufted	TUTI	1	2	3				
Nuthatch, White-br'sted	WBNU	1	2	3				
Creeper, Brown	* BRCR	1	2	3				
Wren, Carolina	CAWR	1	2	3				
Bewick's	* BEWR	1	2	3				
House	HOWR	1	2	3				
Sedge	SEWR	1	2	3				
Marsh	MAWR	1	2	3				
Gnatcatcher, Blue-gray	BGGN	1	2	3				
Bluebird, Eastern	EABL	1	2	3				
Veery	* VEER	1	2	3				
Thrush, Wood	WOTH	1	2	3				
Robin, American	AMRO	1	2	3				
Catbird, Gray	GRCA	1	2	3				
Mockingbird, Northern	NOMO	1	2	3				
Thrasher, Brown	BRTH	1	2	3				
Waxwing, Cedar	CEWA	1	2	3				
Shrike, Loggerhead	LOSH	1	2	3				
Starling, European	EUST	1	2	3				
Virco, White-eyed	WEVI	1	2	3				
Bell's	BEVI	1	2	3				
Yellow-throated	YTVI	1	2	3				
Warbling	WAVI	1	2	3				
Red-eyed	REVI	1	2	3				
Warbler, Blue-winged	* BWWA	1	2	3				
Parula, Northern	NOPA	1	2	3				
Warbler, Yellow	YEWA	1	2	3				
Yellow-throated	* YTWA	1	2	3				
Pine	PIWA	1	2	3				
Prairie	* PRWA	1	2	3				
Cerulean	CRWA	1	2	3				

NAME	8	11	12 13	12 13	12 13	12 13
	OB		PO		PR	CO
Warbler, Black & white *	BAW/W	1	2	3		
Redstart, American	AMRE	1	2	3		
Warbler, Prothonotary	POWA	1	2	3		
Worm-eating *	WEWA	1	2	3		
Swainson's *	SWWA	1	2	3		
Ovenbird	OVEN	1	2	3		
Waterthrush, Louisiana	LOWA	1	2	3		
Warbler, Kentucky	KEWA	1	2	3		
Yellowthroat, Common	COYE	1	2	3		
Warbler, Hooded *	HOWA	1	2	3		
Chat, Yellow-breasted	YBCH	1	2	3		
Tanager, Summer *	SUTA	1	2	3		
Scarlet	SCTA	1	2	3		
Cardinal, Northern	NOCA	1	2	3		
Grosbeak, Rose-breasted	RBRG	1	2	3		
Blue *	BLGR	1	2	3		
Bunting, Indigo	INBU	1	2	3		
Dickcissel	DICK	1	2	3		
Towhee, Rufous-sided	RSTO	1	2	3		
Sparrow, Bachman's *	BASP	1	2	3		
Chipping	CHSP	1	2	3		
Field	FISP	1	2	3		
Vesper	VESP	1	2	3		
Lark	LASP	1	2	3		
Savannah	SASP	1	2	3		
Grasshopper	GRSP	1	2	3		
Henslow's *	HESP	1	2	3		
Song	SOSP	1	2	3		
Swamp	SWSP	1	2	3		
Bobolink	BOBO	1	2	3		
Blackbird, Red-winged	RWBL	1	2	3		
Meadowlark, Eastern	EAME	1	2	3		
Western *	WEWE	1	2	3		
Blackbird, Yellow-hd *	YHBL	1	2	3		
Grackle, Common	COGR	1	2	3		
Cowbird, Brown-headed	BHCO	1	2	3		
Oriole, Orchard	OROR	1	2	3		
Northern	NOOR	1	2	3		
Finch, House *	HOFI	1	2	3		

[illegible]

DATE	no. of hours	no. of observers	person hours
TOTAL			

OBSERVERS' NAMES

Figure 5. Data entry form. Front and back sides of the form are shown here at half of the actual size.

## Sampled Blocks

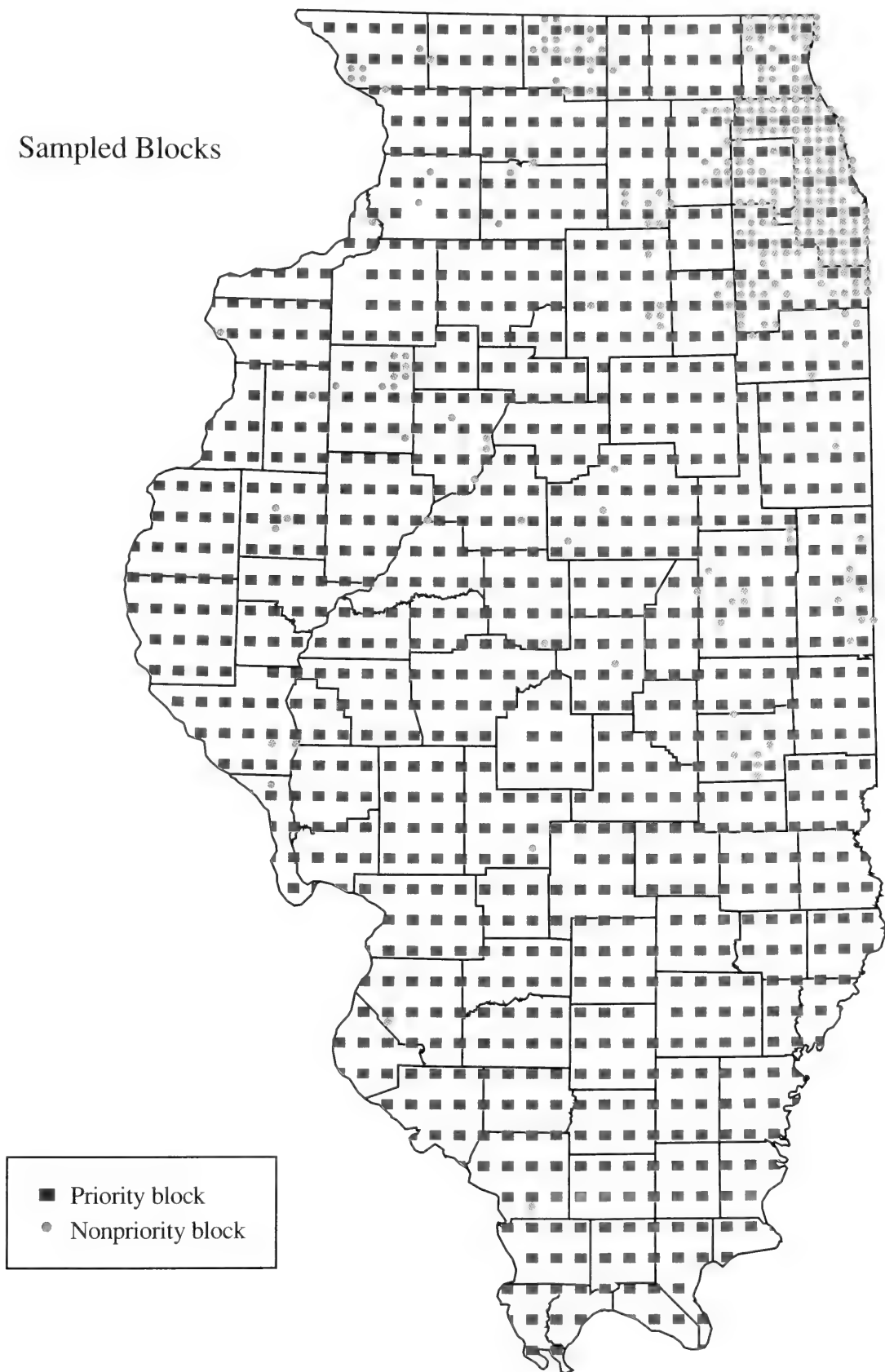


Figure 6. Blocks that were sampled for the Illinois Breeding Bird Atlas Project.

# Number of Observer Hours Per Priority Block

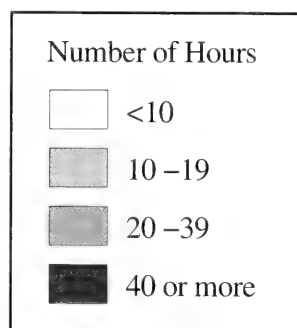


Figure 7. Number of observer hours per sampled priority block.

Number of Species  
with Breeding Evidence  
Per Priority Block

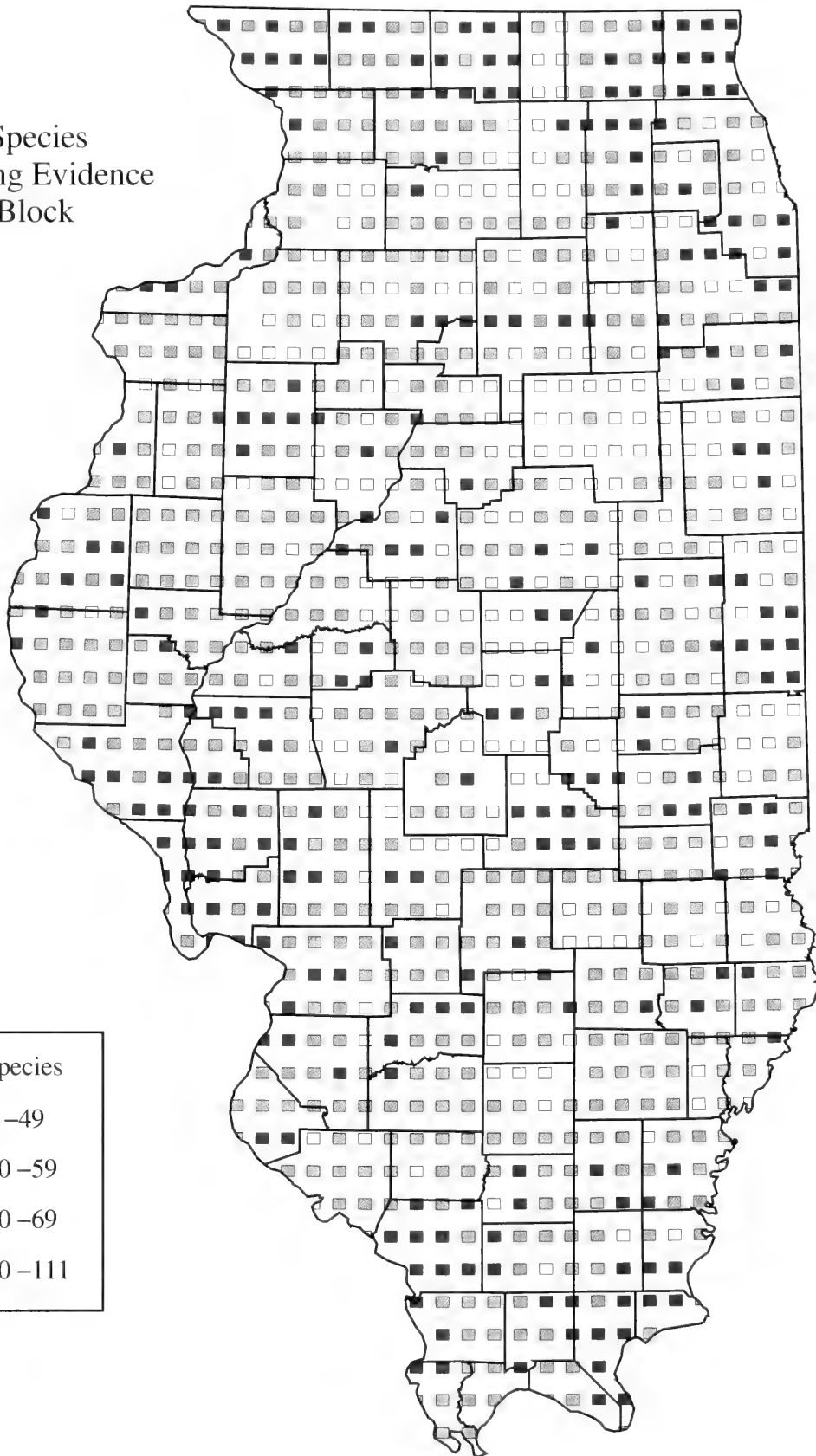
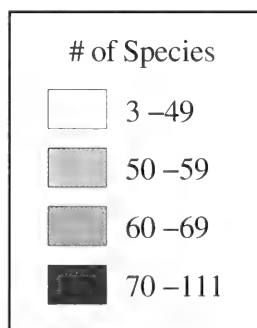


Figure 8. Number of species with breeding evidence per sampled priority block.

## Breeding Bird Survey



Figure 9. Breeding Bird Survey routes in Illinois and the states in the upper Midwest region. The BBS is a roadside survey with data collected at 0.5 mile intervals along a 24.5-mile long route.

## Major Streams and Lakes



Figure 10. Major streams and lakes in Illinois.

## Natural Divisions



Figure 11. Natural Divisions of Illinois. Fourteen natural regions, or divisions, were delineated according to topography, glacial history, bedrock, soils, and distribution of plants and animals (Schwegman et al. 1973).



## Land Cover in the Early 1800s

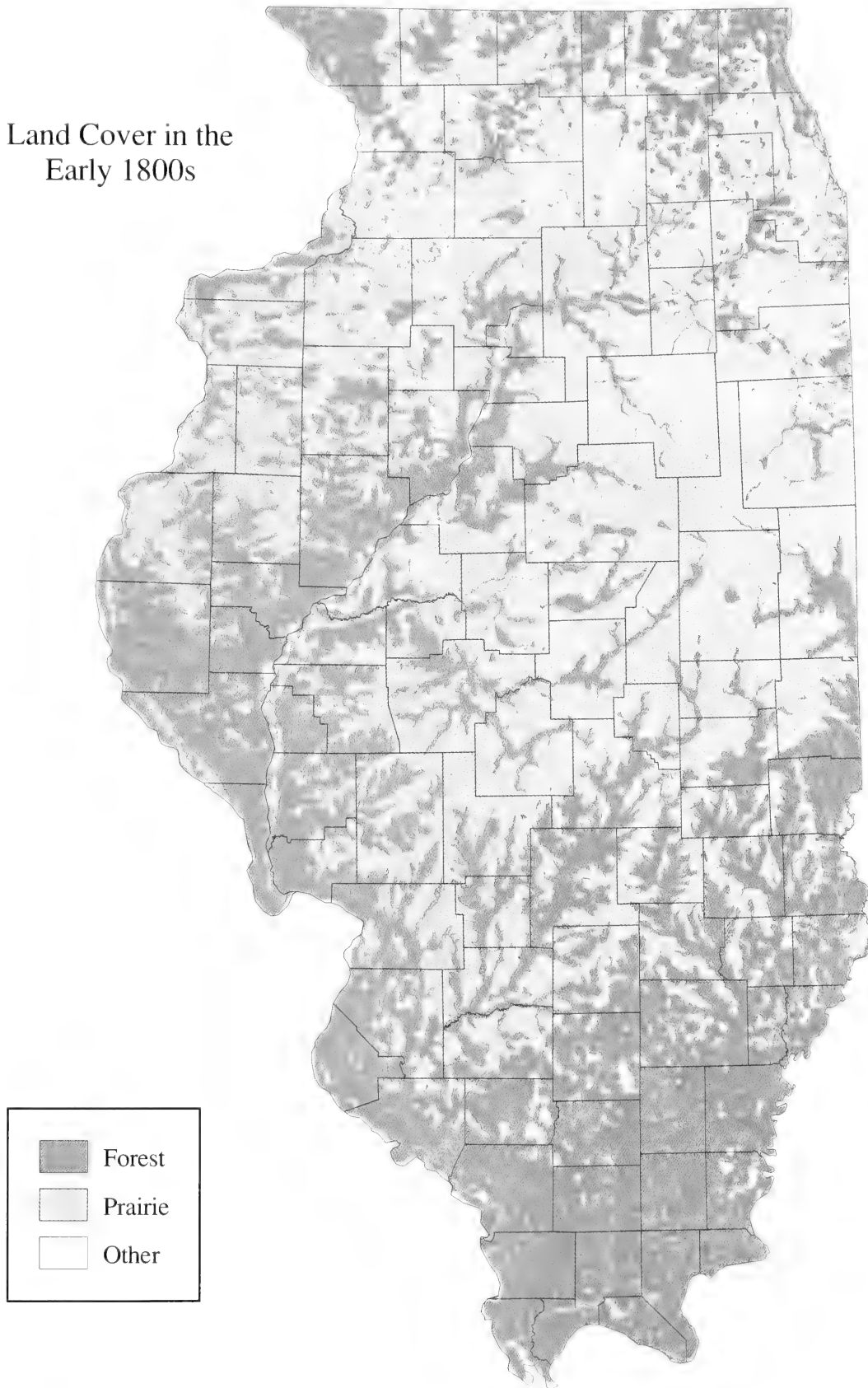


Figure 12. Land cover of Illinois in the early 1800s. The source of information is the "Land Cover in the Early 1800s" database, which was derived by digitizing the U.S. General Land Office maps created from maps and notes of surveyors conducting the Public Land Survey.

## Land Cover in the 1990s

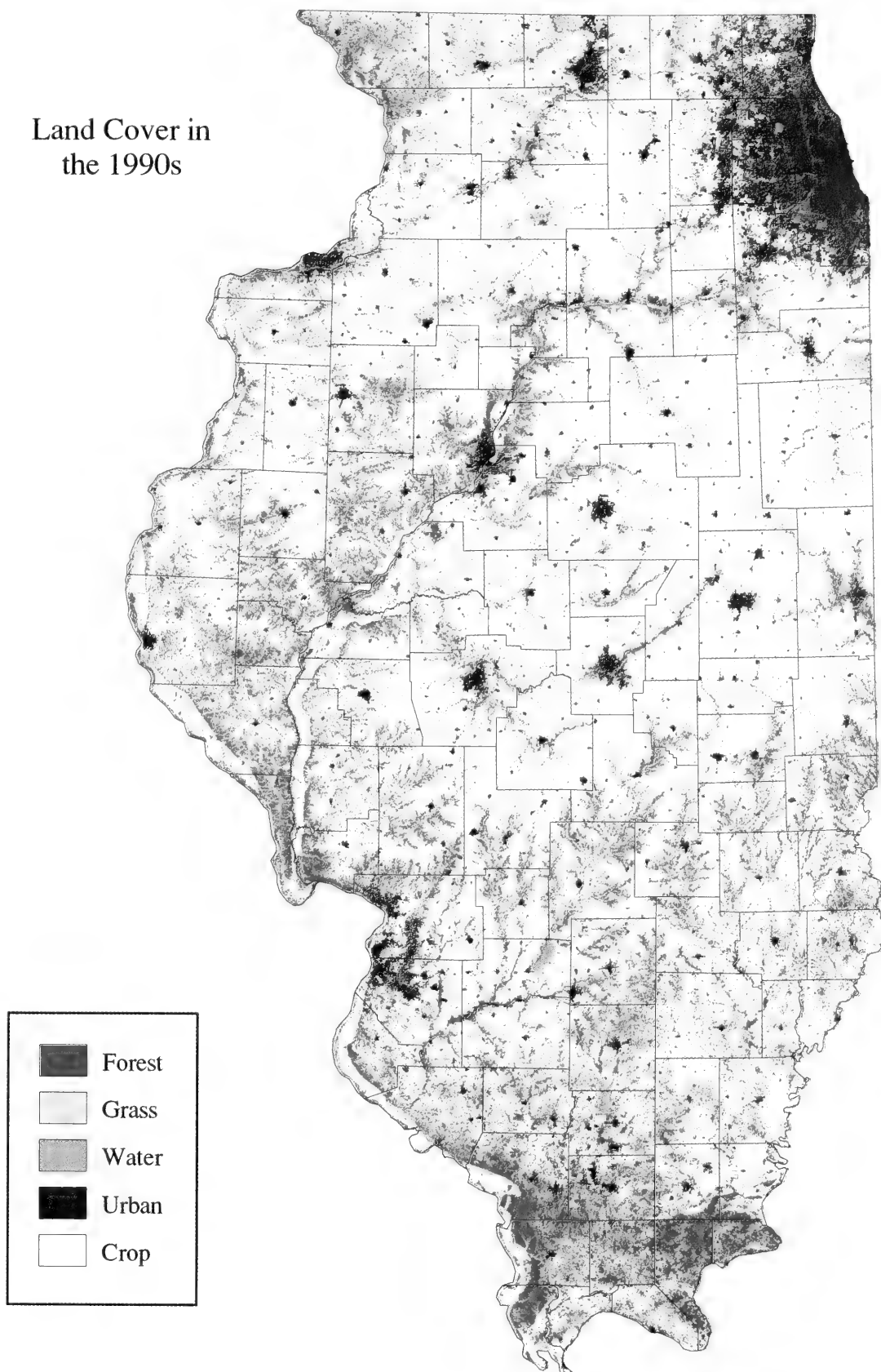


Figure 13. Land cover of Illinois in the 1990s. The source of information is the Land Cover of Illinois database, which was derived from Landsat Thematic Mapper (TM) satellite imagery acquired from 1991 to 1995.

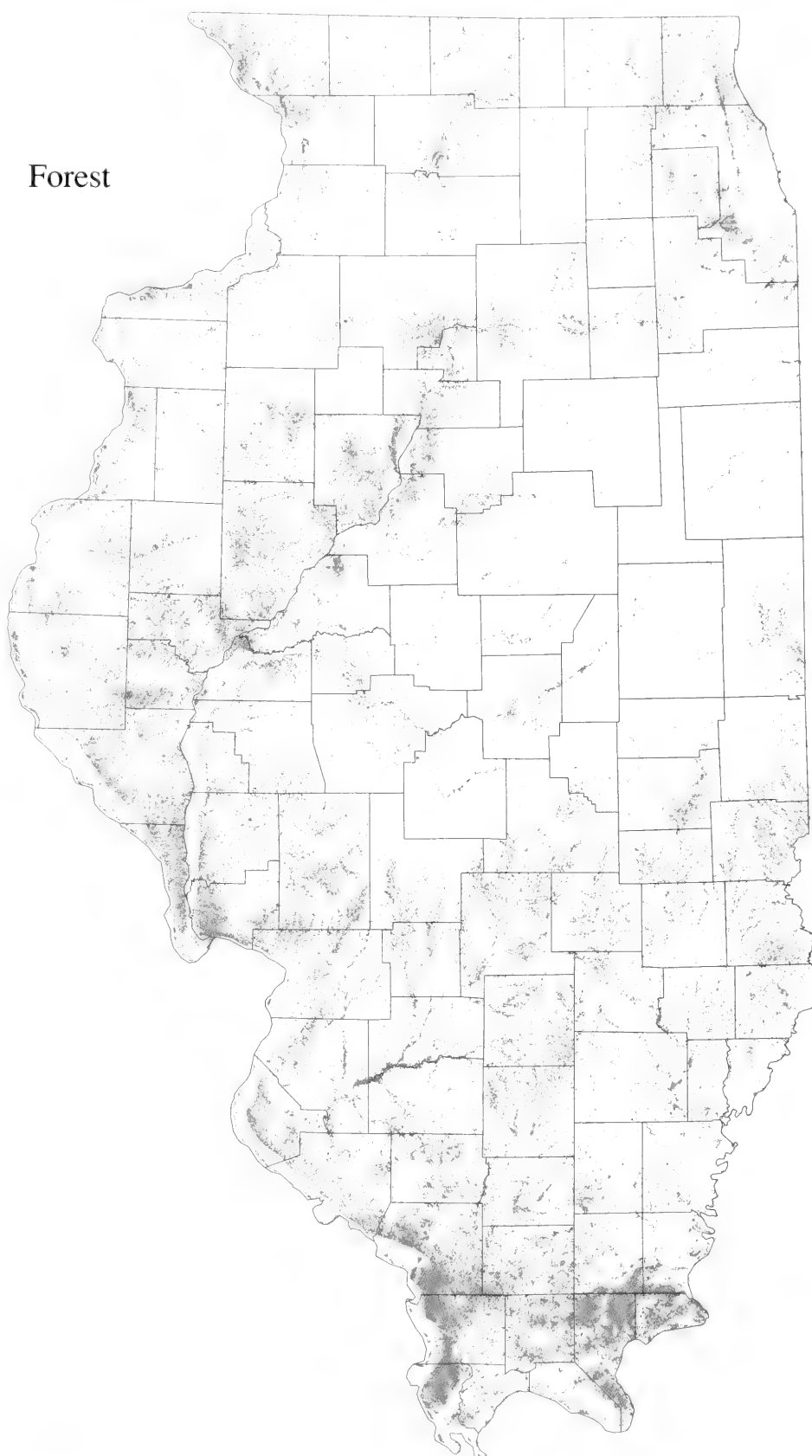


Figure 14. Forested areas in Illinois in the 1990s. The source of information is the Land Cover of Illinois database, which was derived from Landsat Thematic Mapper (TM) satellite imagery acquired from 1991 to 1995.

## Urban Land



Figure 15. Urban areas in Illinois in the 1990s. The source of information is the Land Cover of Illinois database, which was derived from Landsat Thematic Mapper (TM) satellite imagery acquired from 1991 to 1995.

## Wetlands

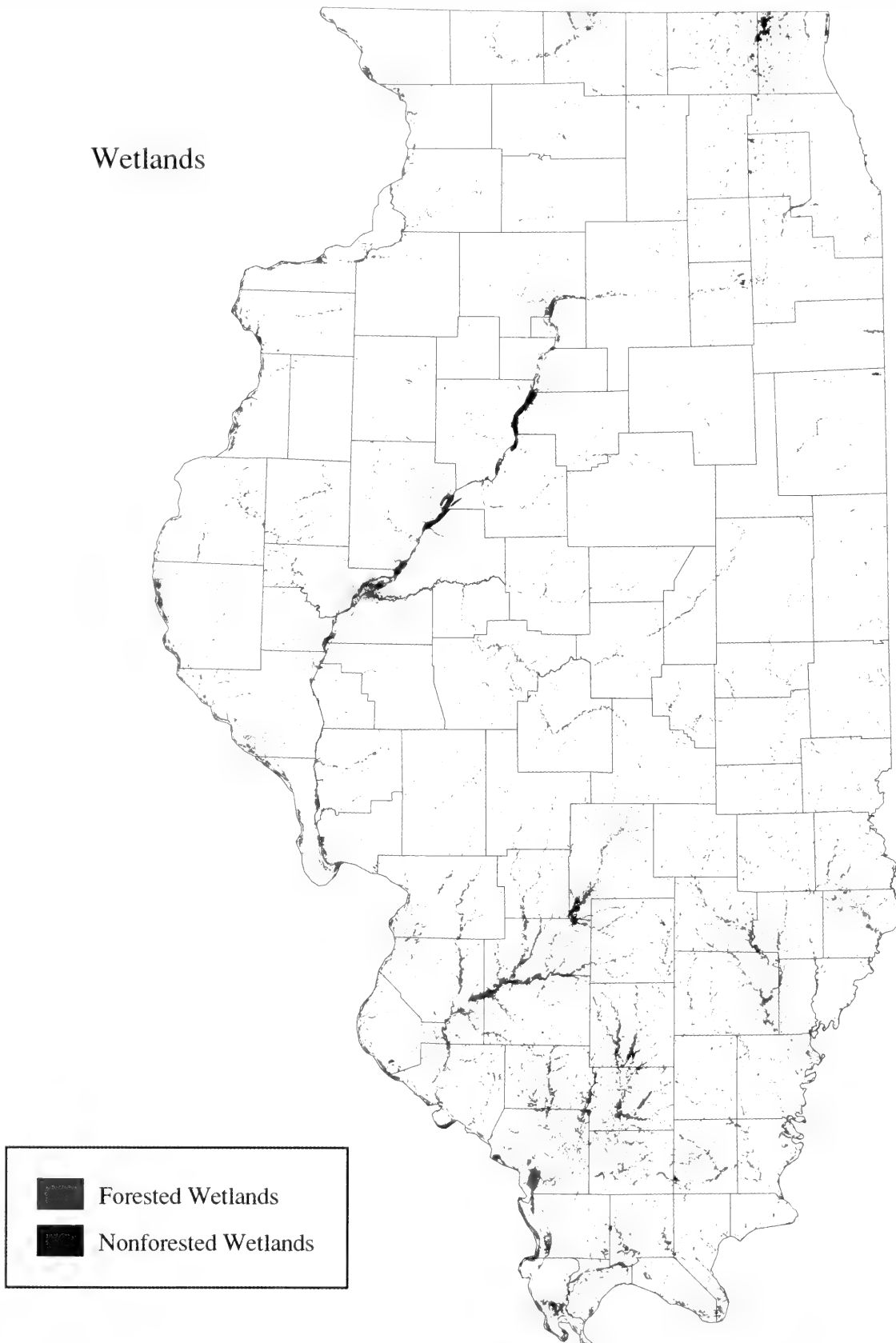


Figure 16. Wetlands in Illinois in the 1980s. The source of information is the USFWS National Wetlands Inventory, which is derived from aerial photography acquired from 1980 to 1987.

# Guide to Species Accounts

**Common and scientific names**  
(American Ornithologists' Union 1998;  
Banks et al. 2002; Banks et al. 2003).

**Photo credit**

## Loggerhead Shrike

## *Lanius ludovicianus*



Joe Milosevich

**Code:** LOSH

**Range-wide Distribution:** south-central Canada, south through most of the U.S. and Mexico

### ILLINOIS

**Abundance:** rare migrant and uncommon to rare summer and winter resident, decreasing northward.

**Endangered/Threatened Status:** threatened

**Breeding Habitat:** open fields with scattered trees, open woodland, and shrubland; thorny trees.

**Nest:** a bulky cup of twigs, forbs, and bark strips woven together and lined with finer materials, in tree.

**Eggs:** 5-6, grayish buff, marked with gray, brown, or black near large end.

**Incubation:** 16-17 days.

**Fledging:** from 17 to 21 days.

The breeding range of the Loggerhead Shrike includes south-central Canada, much of the U.S. except the northeastern and northwestern regions, and Mexico. Shrikes inhabit open country with short vegetation interspersed with hedgerows, scattered trees, and bushes, where they are often seen perching on branches or wires along roadsides, waiting for prey. Loggerhead Shrikes eat large insects, small mammals, birds, reptiles, and amphibians. Hedges and trees that have slender, sharp-pointed thorns, such as Osage orange and honey locust, are used for impaling and caching prey; hence its nickname "butcher bird". As hedgerows have disappeared, shrikes have increasingly used barbed wire fences for the same purpose. They often utilize Osage orange, honey locusts, red cedars, and rose for nesting because they offer concealment and protection for their nests. Loggerhead Shrike populations have declined throughout North America

in recent decades (Yosef 1996). Loss of grassy pastures and hedgerows due to changing agricultural practices and development in the latter half of the 1900s have contributed to the decline (Graber et al. 1973). Increased use of pesticides such as DDT has been suggested as negatively impacting the population but the shrike population has continued to decline even after these pesticides were banned (Yosef 1996).

### Illinois History

In early accounts the Loggerhead Shrike was described as "a more or less common species" (Ridgway 1889) and a common summer resident (Cory 1909). In the 1950s it was still a fairly common species in the Chicago region (Ford 1956). Graber et al. (1973) reported that the population had steadily declined in the northern and central portions of Illinois between 1907 and 1957, and by 1973 the entire northern and central population had basically disappeared. The loss of hedgerows and pastures was thought to be the primary reason for its decline at that time. As a result of a dramatic population decline especially between the 1950s and 1970s, the Loggerhead Shrike is listed as a threatened species in Illinois.

### Breeding Bird Survey Trends

For 1966-2000, the trend estimate for the population in Illinois is -4.5% per year (nonsignificant,  $P = 0.10$ ). The upper Midwest population of the Loggerhead Shrike declined from 1966 to 2000 at an annual rate of -8.4% (significant,  $P < 0.01$ ).

**Credibility Index:** IL = 2 and UM = 2.

### Distribution

Loggerhead Shrikes occurred statewide (they were reported in priority blocks in 80 counties, but were concentrated in the southern and western counties during the atlas project. Records were scattered in the northern and central counties. There is now a fairly large population at the Midewin National Tallgrass Prairie in Will County, which was not reported during the atlas project. Although the northern and central Illinois populations were nearly eliminated by the 1970s, atlas data suggest that local and widely scattered populations are occurring in those parts of the state.

### Frequency

The Loggerhead Shrike was reported from 244 (24.4%) priority blocks and 23 nonpriority blocks. It was Confirmed as breeding in 125 (12.5%) of the priority blocks, mostly by observations of fledged young (59 FL records) and adults feeding young (29 FY records). Breeding was relatively easy to confirm.

**History and trends in Illinois.** (Note that even the early historical accounts occurred after large-scale settlement of the state.)

**Current trends in Illinois and the upper Midwest based on Breeding Bird Survey data, if available for the species. Data are from Appendices G and H.**

**Distribution as documented by the atlas project. The discussion is limited to breeding evidence (i.e., CO, PR, PO records) in priority blocks unless otherwise noted. Note: Reference to frequency (e.g., "species x was one of the most frequently reported species in priority blocks") means number of priority blocks, not abundance within blocks.**

**The number of blocks in which the species was reported and Confirmed, breeding evidence for Confirmed records, factors that may have affected finding the species, and the potential of breeding in more than the blocks in which it was Confirmed. The discussion is limited to CO, PR, PO records unless otherwise noted.**

# Guide to Species Accounts

Numbers and percentages of atlas blocks (priority and all blocks) in which each breeding status category was recorded.

The map shows the blocks in which breeding was Confirmed, Probable, or Possible for this species. Blocks on the state boundary are shown as whole blocks for better visibility but only the portion in Illinois was sampled.

Percentages of breeding status category for sampled priority blocks (left) and for only the priority blocks in which this species was reported (right).

Map symbols for Confirmed, Probable and Possible breeding evidence in priority and nonpriority blocks.

Breeding Bird Survey trends for Illinois from 1966 through 2000 (when available). The line indicates the predicted trend in counts over time.

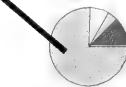
Breeding Bird Survey trends for the upper Midwest from 1966 through 2000 (when available). The line indicates the predicted trend in counts over time.

Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	125	12.5	51.2	139	10.8
Probable	42	4.2	17.2	48	3.7
Possible	77	7.7	31.6	80	6.2
Totals	244	24.4	100.0	267	20.8

\* 998 priority blocks

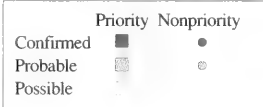
\*\* 1,286 total blocks (priority and nonpriority)



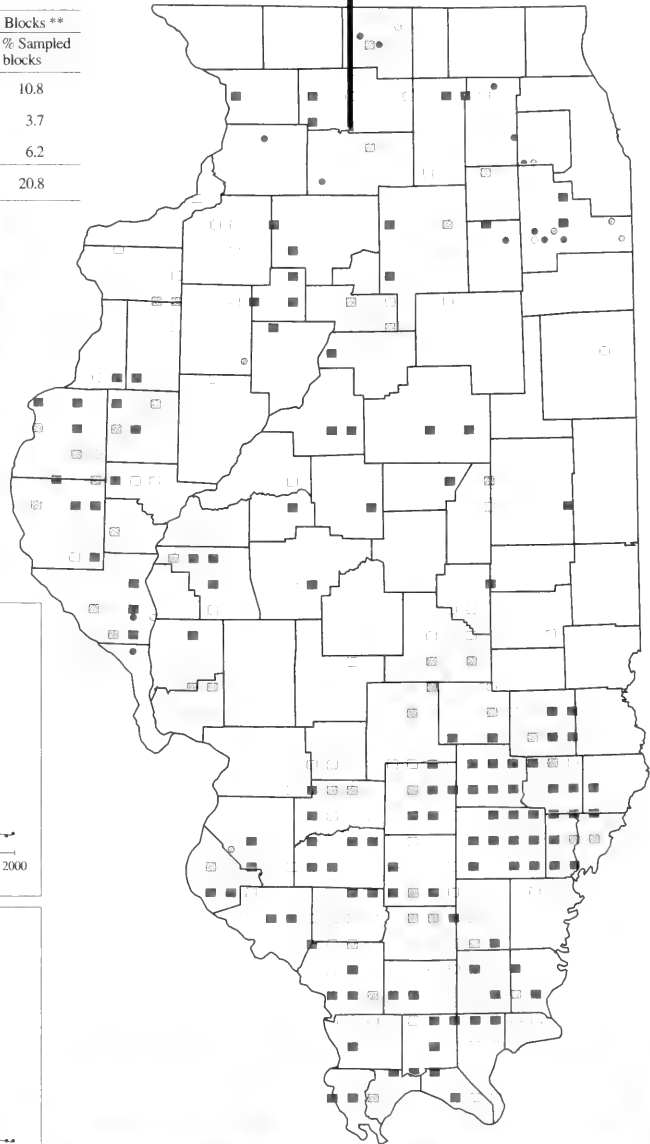
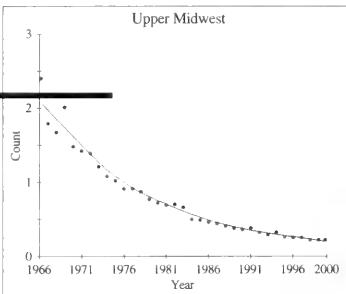
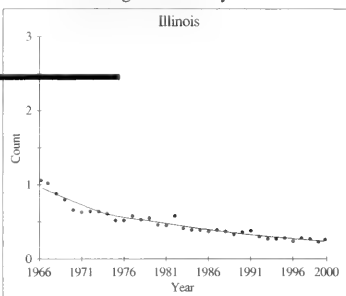
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



Breeding Bird Survey Trends



Loggerhead Shrike



Annalee Fjellberg

**Code: CAGO**

**Rangewide Distribution:** Europe, Asia, nearly all of North America from Alaska and northern Canada south into Mexico.

**ILLINOIS**

**Abundance:** common to abundant migrant, abundant winter resident in south, and common summer resident, with increasing numbers northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** freshwater marshes with emergent vegetation and islands in lakes and ponds.

**Nest:** dry grass, forbs, sticks, aquatic vegetation, and feathers, on ground or elevated platform over water.

**Eggs:** 4–7, white, unmarked (but often nest-stained).

**Incubation:** 25–30 days.

**Fledging:** from 43 to 70 days.

The Canada Goose is the most widely distributed goose in North America. It breeds throughout most of Canada and in the U.S. generally north of the southern tier of states. It is found in a variety of habitats, including tundra, prairie, wetlands, farm ponds, reservoirs, parks, and residential areas. Canada Geese form life-long pair bonds. They nest on islands and margins of lakes, ponds, and rivers. Populations have recovered from critically low levels in the mid-1900s caused by loss of wetlands and excessive harvest. They are currently an abundant species, perhaps more numerous now than at any other time in history due to successful restoration programs and the adaptability of the species (Havera 1999).

**Illinois History**

During the late 1800s, Canada Geese still bred in Illinois but the population was already in decline and nesting geese were rare by 1900 (Ridgway 1895; Nelson 1876; Havera 1999).

The species was a doubtful breeder in the state throughout the first half of the twentieth century (Gault 1922; Smith and Parmalee 1955). Until about 1970, most birds observed in Illinois were the migrants traveling between their Canadian breeding and southern Illinois wintering grounds. The Giant Canada Goose (*B. c. maxima*), a subspecies thought extinct in 1950, was rediscovered in Minnesota and Canada in 1962 (Hanson 1965) and has been successfully reestablished in its native habitat in the Midwest. The Giant Canada Goose was reintroduced into Illinois in 1969 and has readily adapted to man-made and atypical wetland habitats. After excellent production years, more releases, and natural dispersal, the Canada Goose now breeds statewide and is one of the most abundant nesting waterfowl species in Illinois (Havera 1999).

**Breeding Bird Survey Trends**

Waterfowl populations are not usually adequately sampled by the BBS; however, the Canada Goose may be an exception. The trend estimate for Illinois is 28.8% per year (significant,  $P < 0.01$ ) for 1966–2000. Trend estimates for the upper Midwest region show increasing populations for 1966–2000 and the two subintervals: 18.0% per year for 1966–2000, 21.3% per year for 1966–1979, and 13.4% per year for 1980–2000 (all significant with  $P < 0.01$ ). Since BBS data are obtained in June and nearly all eggs have hatched by mid-May, goslings that hatched in March and April, which appear full-grown in June, may have inflated the trend estimates. The breeding population in the state and region is growing but perhaps not at the rates suggested by the BBS trend estimates.

*Credibility Index:* IL = 3 and UM = 1.

**Distribution**

During the atlas project, Canada Geese were found throughout the state, especially in the northeast. They occurred only sporadically in the southern third of the state. Since the atlas project, their range and abundance have continued to expand and they are more common and widespread than the atlas data indicate. During the atlas project, they were reported in priority blocks in 78 counties.

**Frequency**

Canada Geese were reported from 290 (29.1%) priority atlas blocks and 142 nonpriority blocks. This species was Confirmed as breeding in 212 (21.2%) of the priority blocks. Because of their size and behavior and the fact that goslings could readily be observed walking, swimming, or feeding with the adults, it was easy to confirm breeding for this species.

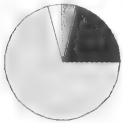


## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	212	21.2	73.1	329	25.6
Probable	40	4.0	13.8	51	4.0
Possible	38	3.8	13.1	52	4.0
Totals	290	29.1	100.0	432	33.6

\* 998 priority blocks

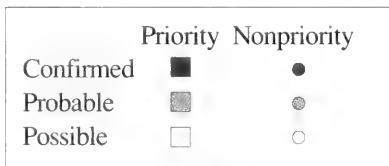
\*\* 1,286 total blocks (priority and nonpriority)



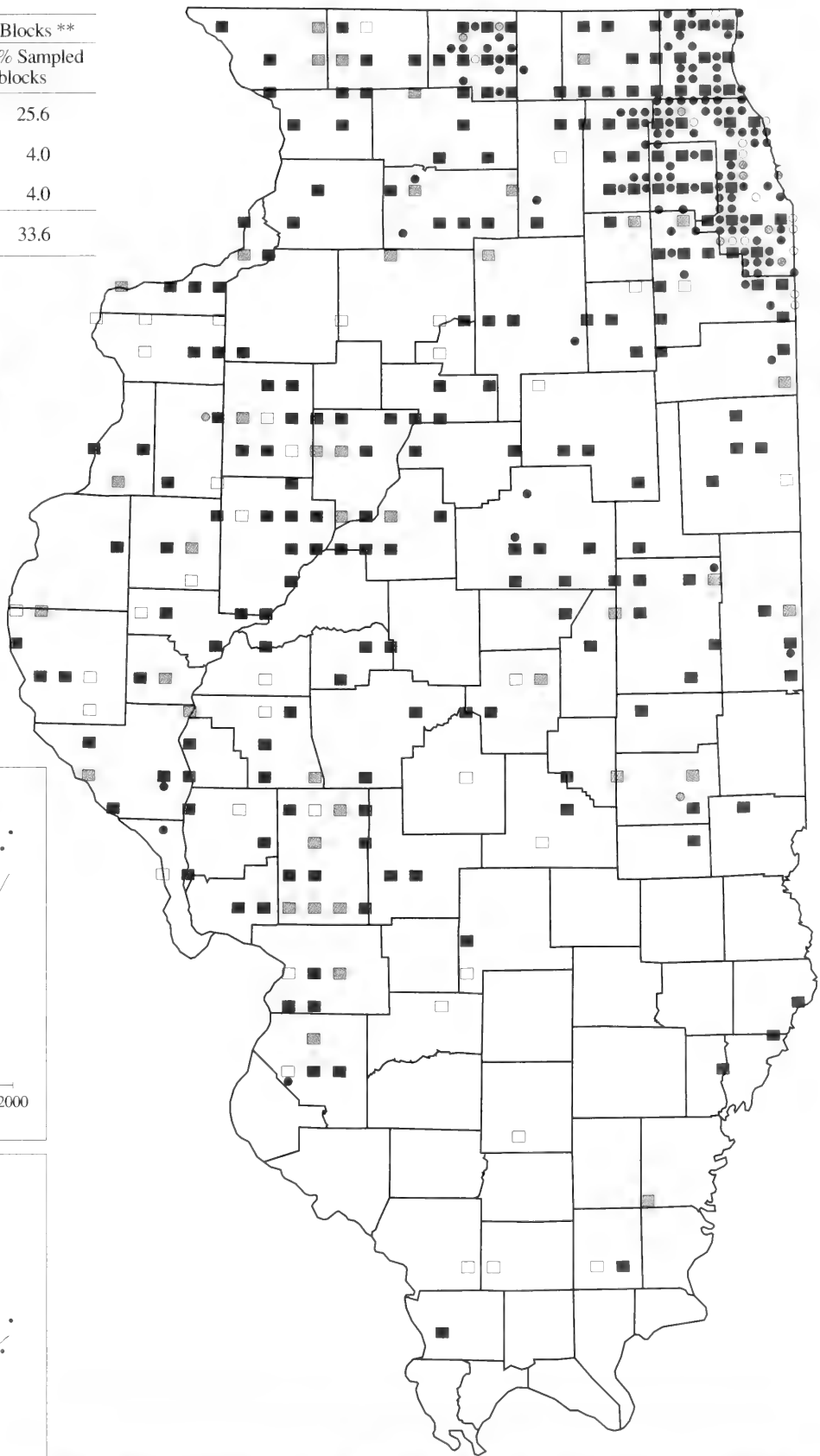
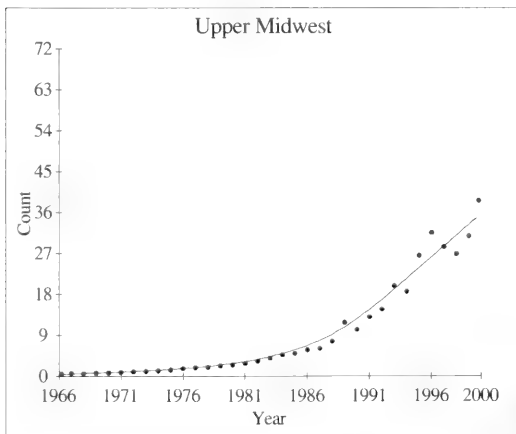
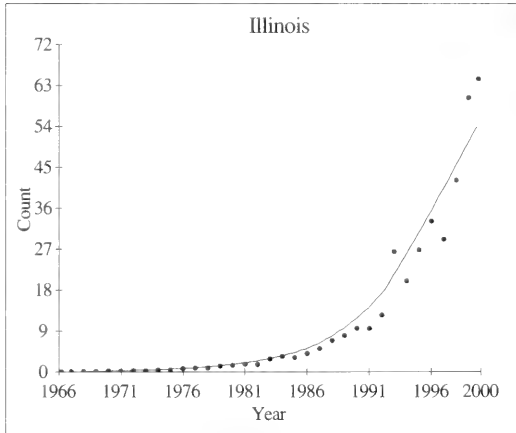
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Canada Goose**



Eric Walters

## Code: MUSW

**Rangewide Distribution:** native of Eurasia; introduced populations occur in southeastern Canada; east coast and northwestern U.S.; and the Great Lakes region.

## ILLINOIS

**Abundance:** uncommon to fairly common introduced, permanent resident; irregular migrant.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** lakes, ponds, and marshes with emergent vegetation; especially near golf courses, commercial complexes, and residential developments.

**Nest:** a large, elliptical assemblage of aquatic vegetation and feathers, on the ground.

**Eggs:** 4–8, light gray to bluish green, unmarked.

**Incubation:** 36–38 days.

**Fledging:** from 115 to 155 days.

Swans have long been valued for their elegance and purity. Because of their large size, pure white color, conspicuous behavior, and association with human development, Mute Swans are difficult to miss. Although not native to North America, they are now permanent residents. They were introduced in North America from the mid-1800s through the early 1900s. North American breeding populations are currently concentrated along the Atlantic coast, in the Great Lakes region, and in the northwestern U.S. They are adapt-

able and inhabit a variety of aquatic areas, including lakes, ponds, and slow-moving rivers. Swans are considered to be beneficial for their consumption of large quantities of filamentous algae and troublesome aquatic plant life. Due to their aggressive nature, however, a large population can displace some native species, e.g., waterfowl and wetland species, from nesting and wintering sites.

## Illinois History

The first documented record of Mute Swans in the wild in Illinois was a release in Fulton County in 1971 by private citizens (Bohlen 1989). More releases in the state followed. Mute Swans are normally considered nonmigratory, but they do move around and some migration may now occur. The introduced population in Illinois is productive and regularly enhanced with escapees, nonpinioned young, and those that emigrate from other states.

## Breeding Bird Survey Trends

A BBS trend estimate is not available for Illinois because of the small population size and localized breeding distribution of this species. In the upper Midwest the BBS trend estimate is 5.4% per year (nonsignificant,  $P = 0.33$ ) for 1966–2000 but the sample size is small.

*Credibility Index:* IL = none and UM = 3.

## Distribution

The Mute Swan was reported in priority blocks in eight counties. However, its population is growing and expanding without additional releases. Its presence in Illinois is primarily the result of introductions intended to enhance the beauty of the landscape. These swans are also released on small ponds and lakes to discourage Canada Geese from establishing territories. Mute Swans are most prevalent in man-made ponds, lakes, and marshes and are especially associated with commercial and residential developments. Many birds remain year round while others are captured in the fall and released in the following spring.

## Frequency

The Mute Swan was reported from 12 (1.2%) priority blocks and 20 nonpriority blocks. Breeding was Confirmed in 5 (0.5%) of the priority blocks; the breeding evidence for all five records was the presence of cygnets.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	5	0.5	41.7	14	1.1
Probable	2	0.2	16.7	6	0.5
Possible	5	0.5	41.7	12	0.9
Totals	12	1.2	100.0	32	2.5

\* 998 priority blocks

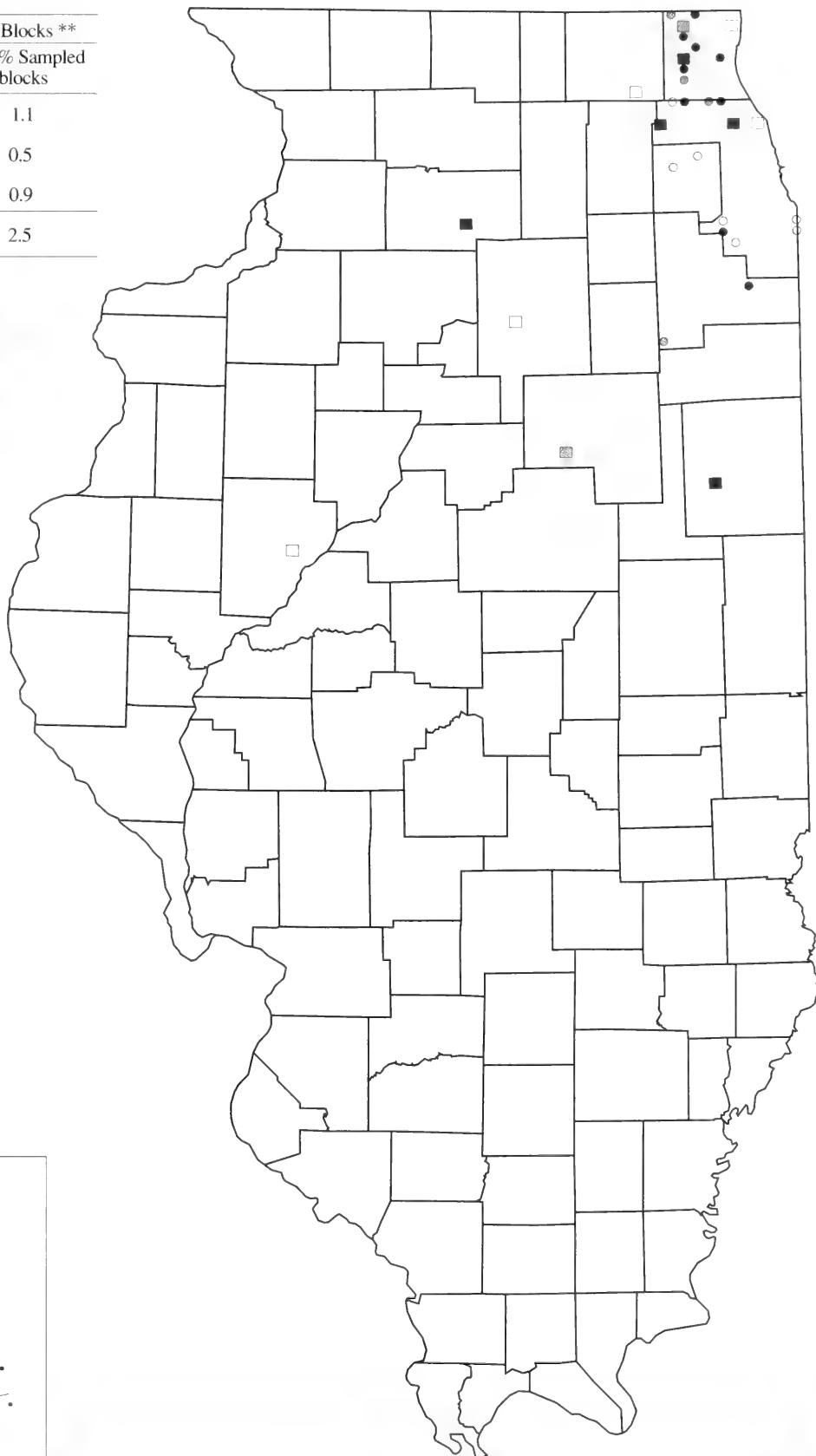
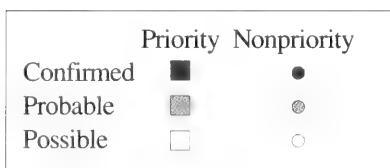
\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

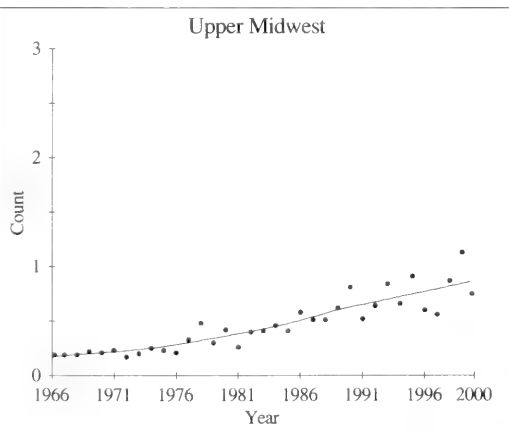


% of priority blocks with records for this species



## Breeding Bird Survey Trends

Upper Midwest



**Mute Swan**



Dennis Oehmke

**Code:** WODU

**Rangewide Distribution:** southern Canada, south into Mexico.

**ILLINOIS**

**Abundance:** common migrant and summer resident; uncommon winter resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** wooded swamps, sloughs, ponds, marshes, and flooded forests.

**Nest:** wood chips and down-lined tree cavity or nest box; occasionally far from water.

**Eggs:** 10–15, creamy white, unmarked.

**Incubation:** 28–37 days.

**Fledging:** from 56 to 70 days.

This brightly colored duck is a common riparian species in North America. The breeding range includes southern Canada and the eastern half, the northwest, and west coast of the U.S. Wood Ducks inhabit wooded areas with streams, ponds, and marshes. Although still dependent on natural cavities for nesting (sycamore trees are a favorite), Wood Ducks readily accept man-made nest boxes. Nest sites are usually near or over water. Soon after a nest site has been selected, the female becomes secretive and is difficult to observe. The Wood Duck was believed to be nearly extirpated rangewide by the early 1900s due to unregulated and spring hunting and habitat loss (Bohlen 1989; Bellrose and Holm 1994). After the Federal Migratory Bird Act of 1918 was enacted and hunting pressure stopped, the Wood Duck population rebounded, increasing until the mid-1980s (Hepp

and Bellrose 1995). By the 1940s the population was sufficiently large enough to allow a controlled hunting season. Although the Mississippi Valley population experienced another temporary decline in the 1950s, modern wildlife management practices, adequate habitat, and hunting regulations during the last four decades have been responsible for its current substantial population level. The species is currently doing well throughout its range (Hepp and Bellrose 1995). The Wood Duck is second only to the Mallard in the number of birds harvested in the Atlantic and Mississippi flyways (Hepp and Bellrose 1995).

**Illinois History**

The Wood Duck, one of two cavity-nesting ducks that occur in Illinois, is currently the most abundant nesting waterfowl species in the state (Havera 1999). There were probably large numbers of this species through the late 1800s but with unregulated hunting and loss of bottomland habitat, the Illinois population had declined dramatically by the early 1900s (Havera 1999). In 1942 the population in Illinois had recovered sufficiently and the hunting season was reopened. Protection from excessive hunting has helped the recovery, but it may never return to pre-1900 levels due to loss of bottomland forest and swamps (Havera 1999).

**Breeding Bird Survey Trends**

The trend estimates are 5.1% per year (nonsignificant,  $P = 0.05$ ) in Illinois and 4.2% per year (significant,  $P = 0.01$ ) for the upper Midwest for 1966–2000. However, this species is not adequately sampled by the BBS (Sauer and Droege 1990; Bellrose and Holm 1994).

*Credibility Index:* IL = 2 and UM = 2.

**Distribution**

Atlas data indicate that the Wood Duck breeding population was distributed throughout the state. It was reported in priority blocks in 98 counties and Confirmed as breeding in 88 of them. Gaps in distribution tend to coincide with the highly agricultural and least-forested areas of the state.

**Frequency**

The Wood Duck was reported from 476 (47.7%) priority blocks and 133 nonpriority blocks. It was Confirmed as breeding in 324 (32.5%) of the priority blocks, which is about two-thirds of the priority blocks in which it was found. Fledged young, mostly the presence of a female with her ducklings, was the most frequently reported evidence of breeding (290 FL records).

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	324	32.5	68.1	429	33.4
Probable	76	7.6	16.0	93	7.2
Possible	76	7.6	16.0	87	6.8
Totals	476	47.7	100.0	609	47.4

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



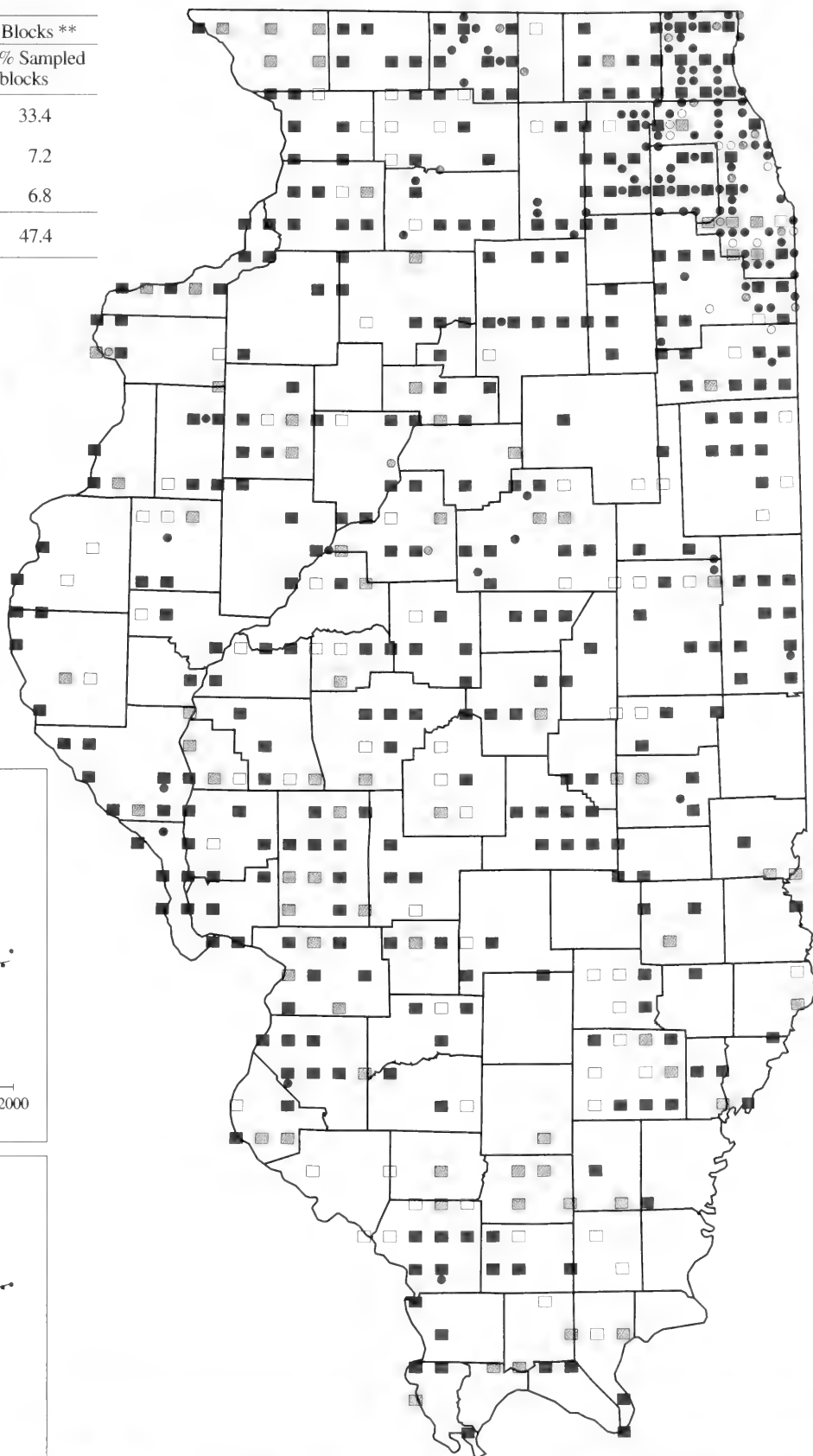
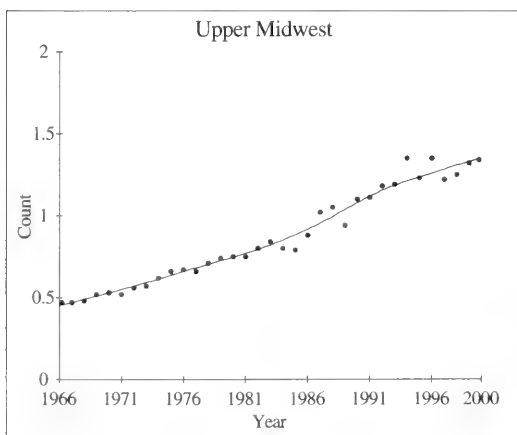
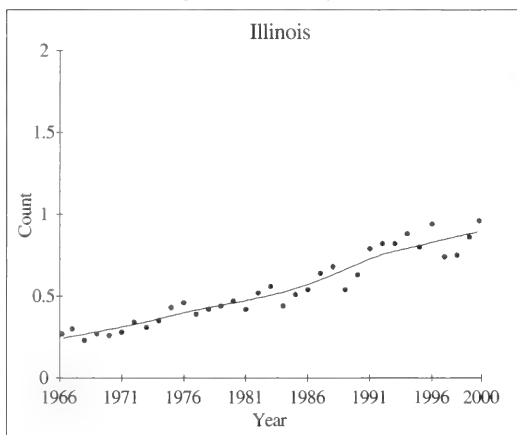
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○

## Breeding Bird Survey Trends



**Wood Duck**



Robert Randall

**Code: MALL**

**Rangewide Distribution:** Asia, Europe, Australia, North America from Alaska and northern Canada south into Mexico, including all of the U.S.

**ILLINOIS**

**Abundance:** abundant migrant and winter resident and fairly common summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** shallow ponds, lakes, and marshes with emergent vegetation, grassy areas, and flooded fields.

**Nest:** hollow of cattails, reeds, or grasses; concealed by vegetation and lined with down; on ground (but occasionally on open nest platforms).

**Eggs:** 7–10, greenish or grayish buff to off-white, unmarked.

**Incubation:** 26–30 days.

**Fledging:** from 42 to 60 days.

The Mallard is the most abundant and widely distributed duck in North America, where the breeding range includes nearly all of Canada and most of the U.S. except the far south. Although the Mallard is the most heavily hunted duck in North America, its population has remained fairly steady (Drilling et al. 2002). Annual aerial surveys indicate the breeding population of Mallards in the midwestern U.S. and the Canadian prairies in 2000 was nearly 9.5 million birds (USFWS 2002). The male is easily identified by its distinctive metallic-green head. They utilize nearly any type of habitat with water—from large reservoirs, power cooling

lakes, and natural marshes to small ponds and ditches. Mallards have adapted to the presence of humans; they are frequently found in man-made settings and may breed in parks and cemeteries as well as more natural habitats. Mallards prefer to nest on the ground in vegetation near water. They are opportunistic and generalist feeders that consume a variety of plant species (seeds and vegetative parts) and, to a lesser degree, animal matter (Havera 1999).

**Illinois History**

Mallards are the most common dabbling duck in Illinois and are most abundant during the fall and winter months when large flocks often concentrate at state and federal refuges. In the mid-to-late 1800s this species was considered a common and abundant summer resident in the northern part of the state and also nested along the Illinois River (Kennicott 1855; Nelson 1876; Havera 1999). In recent decades the breeding population in the state has increased considerably and it now breeds in every county, with the greatest concentrations in the northern and central portions of the state (Bohlen 1989; Havera 1999).

**Breeding Bird Survey Trends**

BBS data indicate that the Mallard population in Illinois has increased at an annual rate of 4.9% (significant,  $P = 0.02$ ) from 1966 to 2000. Upper Midwest populations increased during 1966–2000 and both subintervals; the trend estimate is 2.2% per year (significant,  $P < 0.01$ ) for 1966–2000. *Credibility Index: IL = 1 and UM = 1.*

**Distribution**

The Mallard was reported throughout the state during the atlas project. It was reported in priority blocks in 95 counties and Confirmed as breeding in 79 of them. Mallards occurred with the greatest frequency in the northern part of the state and less frequently in the southern portion of the state where the population is smaller.

**Frequency**

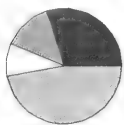
The Mallard was reported in 527 (52.8%) priority blocks and 164 nonpriority blocks. Breeding was Confirmed in 297 (29.8%) of the priority blocks. The observation of broods or small young was the most commonly reported evidence of breeding in priority blocks (266 FL records). Nesting was probably attempted in most other blocks where the species was observed.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	297	29.8	56.4	429	33.4
Probable	140	14.0	26.6	164	12.8
Possible	90	9.0	17.1	98	7.6
Totals	527	52.8	100.0	691	53.7

\* 998 priority blocks

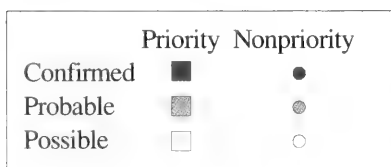
\*\* 1,286 total blocks (priority and nonpriority)



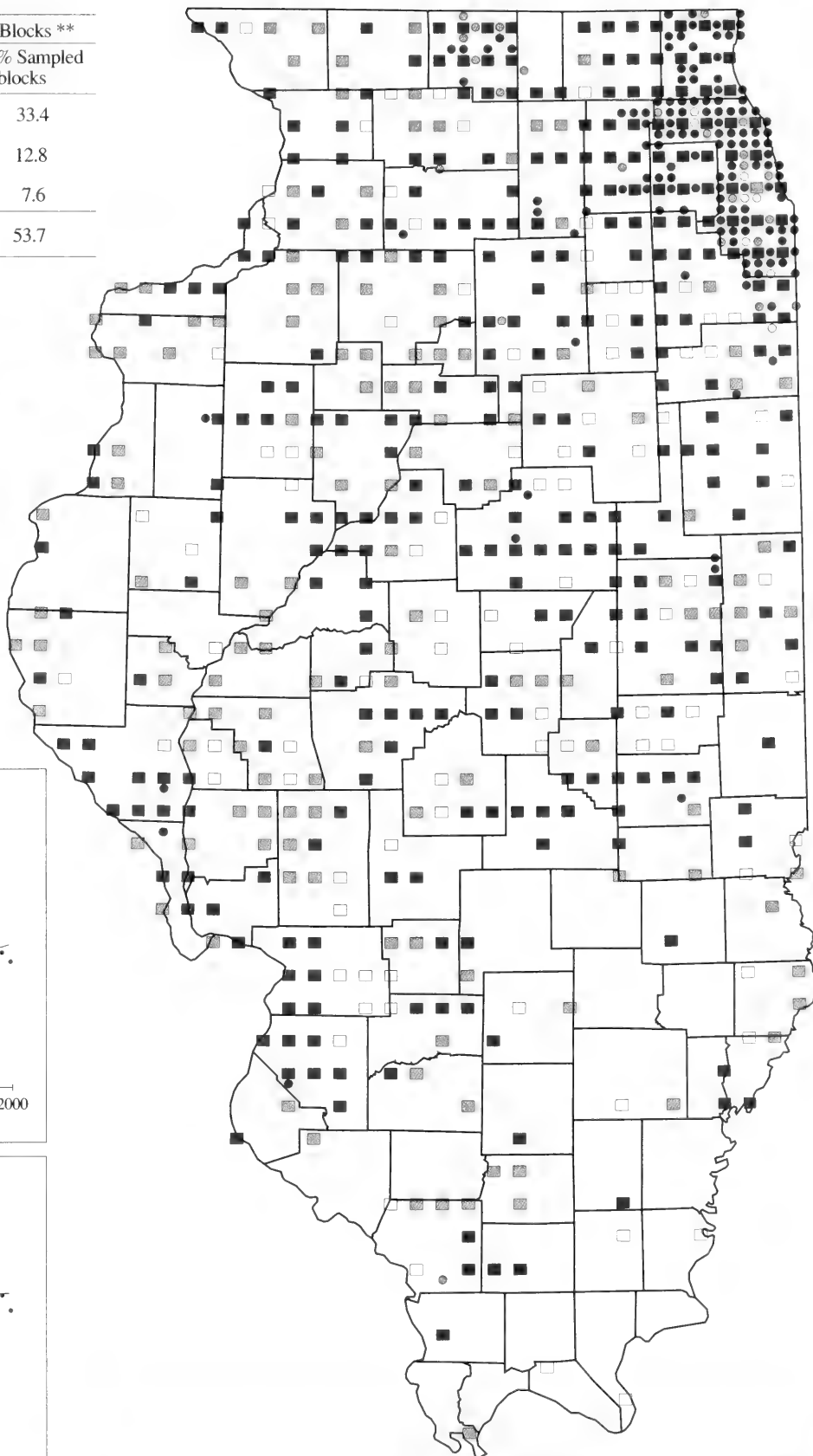
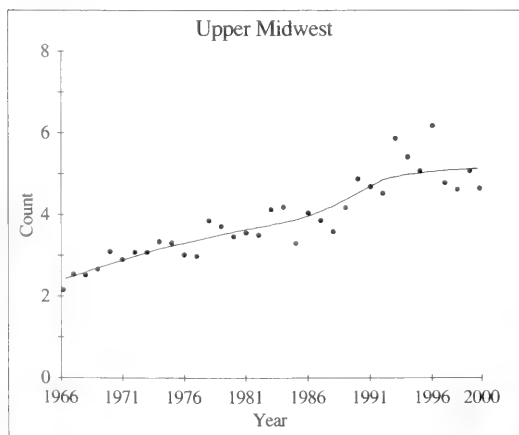
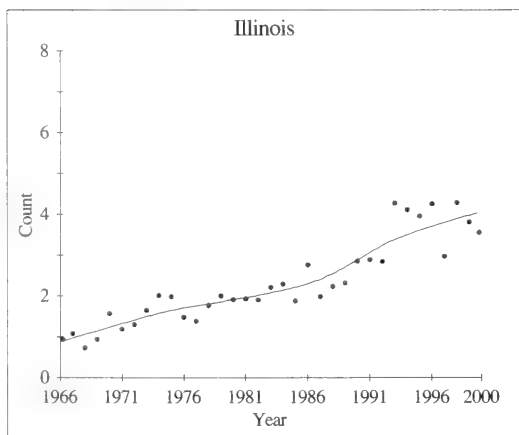
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Mallard**





Dennis Oehmke

**Code:** BWTE

**Rangewide Distribution:** all of North America, from Alaska to northwestern South America.

**ILLINOIS**

**Abundance:** common migrant, uncommon summer resident, very rare winter resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** marshes, sloughs, lakes, streams, flooded weedy fields and sedge meadows.

**Nest:** grasses or cattails, lined with finer materials and down; concealed in dense cover on ground.

**Eggs:** 8–11, creamy- to olive-white, unmarked.

**Incubation:** 23–27 days.

**Fledging:** from 35 to 44 days.

years (Rohwer et al. 2002). Management practices that would benefit this species include creation of vegetated buffers around wetlands and open water.

**Illinois History**

The status of the Blue-winged Teal population in Illinois has remained much the same since the nineteenth century. The species has apparently always been a common spring and fall migrant (arriving later in spring and departing earlier in fall than the other waterfowl species) and a scarce summer and winter resident, depending on the weather (Ridgway 1895). Downstate breeding is sporadic because of the intermittent availability of appropriate habitat. There were breeding records from 66 counties during the period from 1930 to 1996 (Havera 1999). Yetter (1992) estimated the northeastern Illinois population density at 1.04 breeding pairs per square mile (0.40/km<sup>2</sup>).

**Breeding Bird Survey Trends**

The trend estimate for the Blue-winged Teal population in Illinois is –5.9% per year (nonsignificant,  $P = 0.08$ ) from 1966 to 2000; sample size and relative abundance for this species are low. Populations in the upper Midwest are estimated to have declined at an annual rate of –4.0% (significant,  $P < 0.01$ ) from 1966 to 2000.

*Credibility Index:* IL = 3 and UM = 2.

**Distribution**

The Blue-winged Teal was most frequently reported in the northeastern counties and at scattered locations in decreasing frequency southward during the atlas project. It may breed in intermittent wetlands in suitable years.

**Frequency**

The Blue-winged Teal was reported in 88 (8.8%) priority blocks and 58 nonpriority blocks. Breeding was Confirmed in 35 (3.5%) of the priority blocks, mostly by observation of broods (33 FL records). Because female Blue-winged Teal separate from the males in the spring and summer to stay close to their nests and broods, records of a pair together would most likely indicate that successful nesting did not occur. A male seen alone late in the season (i.e., the Possible breeding category) is frequently part of a breeding pair and may be as reliable an indicator of breeding as observing a pair together.

The Blue-winged Teal is a small, fast-flying dabbling duck that can be surprisingly tame; a flock in a small puddle next to the roadside often allows a close approach. It is a common breeding species in the north-central U.S. and central Canada but also breeds throughout much of Canada and the northern half of the U.S. Nesting usually occurs later than for other ducks due to a late spring migration. Blue-winged Teal prefer open marshlike areas that include a wide diversity of aquatic plants and opportunistically utilize transient lakes and flooded fields. They typically nest on the ground in vegetation near water, including marshes and ponds. Breeding populations can fluctuate considerably in response to dry



## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	35	3.5	39.8	59	4.6
Probable	32	3.2	36.4	56	4.4
Possible	21	2.1	23.9	31	2.4
Totals	88	8.8	100.0	146	11.4

\* 998 priority blocks

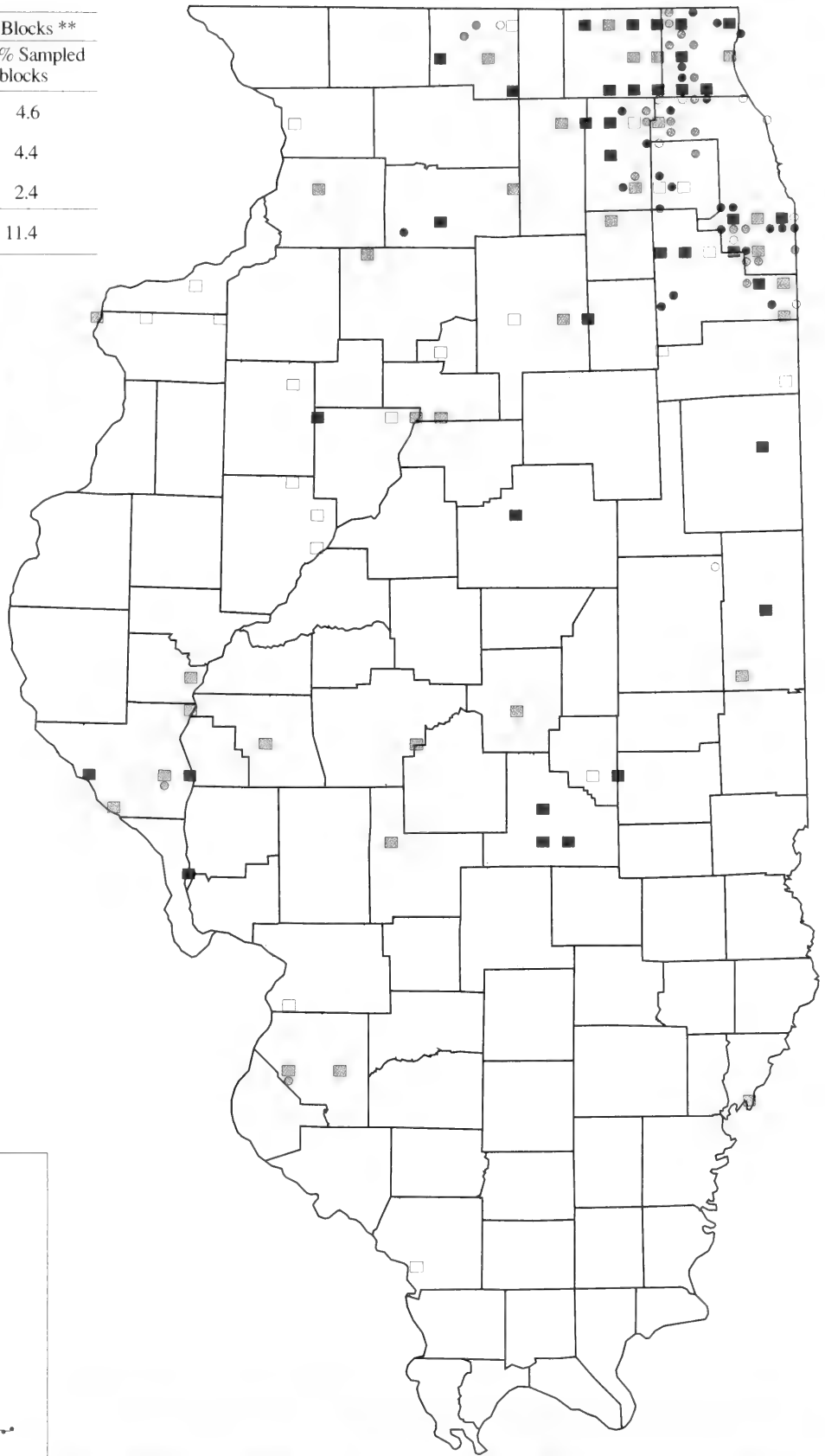
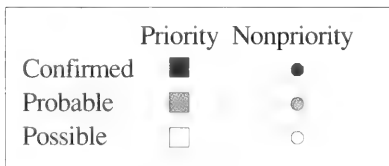
\*\* 1,286 total blocks (priority and nonpriority)



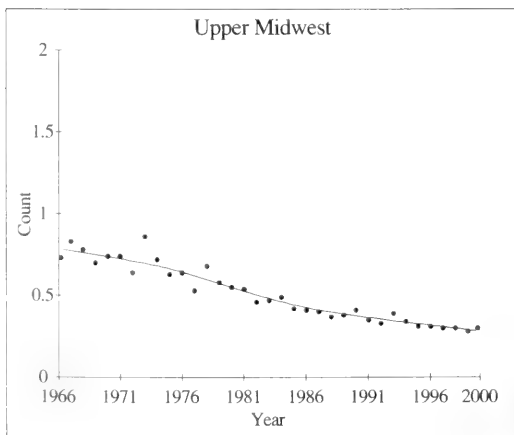
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Blue-winged Teal**



Richard Day / Daybreak Imagery

**Code: NOSH**

**Rangewide Distribution:** Asia, Europe, much of North America from Alaska south to northern South America.

**ILLINOIS**

**Abundance:** common migrant, uncommon winter resident, rare summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** shallow, freshwater marshes and flooded wetlands with emergent vegetation.

**Nest:** concealed depression on ground filled with dry grasses and lined with down; in short meadow grass or emergent vegetation.

**Eggs:** 6–14, olive-buff to green-gray, unmarked.

**Incubation:** 22–25 days.

**Fledging:** from 38 to 66 days.

The Northern Shoveler is a common holarctic duck that breeds in much of western Canada, Alaska, northwestern and north-central U.S., and locally in eastern North America. The male and female can be readily distinguished from other duck species by their prominent spatula-shaped bills. When droughts occur in the Shoveler's primary breeding range, which is the prairie pothole region of the north-central U.S. and Canada, and the marshes and seasonal wetlands on which it depends dry up, these birds become opportunistic nesters and breed wherever suitable nesting habitat and food

are available. Nesting and other summer occurrences at the fringes of or outside the normal range are possibly drought-displaced birds. Nests are usually placed in open meadows or dense grassy cover up to 200 feet from the water's edge (Bellrose 1976). The Shoveler's diet consists of more animals (e.g., aquatic insects, gastropods, and crustaceans) than that of other dabbling ducks, especially in the spring (Ankney and Afton 1988), but they are mainly herbivores.

**Illinois History**

The Northern Shoveler is a common migrant in Illinois, resting and feeding in suitable shallow wetlands during its passages north in the spring and south in the fall. Illinois, which is at the southern edge of the breeding range, has apparently never been a major breeding area for the Northern Shoveler. Most breeding records published prior to the atlas project were in northeastern Illinois, particularly Cook County (at least three accounts between 1890 and 1968) and Goose Lake Prairie State Park in Grundy County (1973) (Nelson 1876; Havera 1999). Another three broods occurred in Fulton County in 1973 (Bohlen 1989). Shovelers are often present and move around the state during the summer months, but evidence of nesting is usually not detected.

**Breeding Bird Survey Trends**

There was insufficient BBS data to estimate a trend for the Northern Shoveler population in Illinois. The upper Midwest trend for 1966–2000 is estimated at 0.9% per year (nonsignificant,  $P = 0.52$ ).

*Credibility Index: IL = none and UM = 3.*

**Distribution**

The Northern Shoveler was a rare and sporadic breeding species in Illinois during the atlas project. It is expected to occasionally breed in the state, especially in the northeastern counties. The record in Peoria County was farther south than expected.

**Frequency**

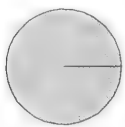
The Northern Shoveler was reported from 1 (0.1%) priority block and 4 nonpriority blocks. It was reported as a Probable breeder in a priority block in Peoria County and was Confirmed in one block, a nonpriority block in DuPage County.

## Breeding Evidence

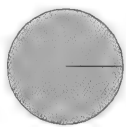
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	0	0.0	0.0	1	0.1
Probable	1	0.1	100.0	1	0.1
Possible	0	0.0	0.0	3	0.2
Totals	1	0.1	100.0	5	0.4

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	▒	◐
Possible	□	○



**Northern Shoveler**



Kanae Hirabayashi

**Code:** NOPI

**Rangewide Distribution:** northern Asia and Europe, most of North America, from northern Canada and Alaska south into Central America.

**ILLINOIS**

**Abundance:** locally common to uncommon migrant, uncommon winter resident, rare summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** marshes and seasonally flooded wetlands.

**Nest:** dry grasses and leaves lined with finer materials and feathers; on ground, concealed in short vegetation away from the water.

**Eggs:** 6–9, olive green to olive buff, unmarked.

**Incubation:** 22–25 days.

**Fledging:** from 36 to 57 days.

The Northern Pintail is circumpolar in distribution and abundant in North America, where it breeds primarily in the northern Great Plains; its breeding range also includes nearly all of Canada and Alaska. Northern Pintails nest on the ground in open upland near water, and forage in lakes, ponds, and marshes. Loss of marshes and seasonal wetlands

in its primary breeding area caused a serious decline in population. From 1955 to 1991 there was an estimated 54% decline in the North American breeding population (Jackson et al. 1996). Periods of long-term drought have also caused dramatic declines in populations, but are usually followed by a recovery (Austin and Miller 1995).

**Illinois History**

Illinois has never been a major breeding area for the Northern Pintail. It occurs in the state primarily as a migrant, resting and feeding as it passes through on its way north in the spring and south in the fall. The majority of published breeding records prior to the atlas project were in northern Illinois, primarily Cook County (at least six accounts between 1875 and 1978), Goose Lake Prairie State Park in Grundy County (1973 and 1974), and Whiteside County (1959) (Bohlen 1989). The atlas record in Shelby County is the southernmost confirmed breeding location ever reported in Illinois.

**Breeding Bird Survey Trends**

The Northern Pintail is rare in Illinois and BBS data are not adequate to estimate trends. The upper Midwest trend estimate for 1966–2000 is –11.9% per year (nonsignificant,  $P = 0.12$ ).

*Credibility Index:* IL = none and UM = 3.

**Distribution**

The Northern Pintail was rarely reported in the atlas project. This species occasionally occurs during the breeding season in Illinois, especially in the northeastern counties. The record in Shelby County was 125 miles farther south than previously recorded. The three Possible records in Will County are relatively close to previously successful sites. Since the atlas project, breeding has been reported in the Illinois River valley.

**Frequency**

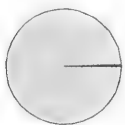
The Northern Pintail was found in 4 (0.4%) priority blocks and 3 nonpriority blocks. Breeding was Confirmed in only 1 block, a priority block in Shelby County.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	25.0	1	0.1
Probable	2	0.2	50.0	2	0.2
Possible	1	0.1	25.0	4	0.3
Totals	4	0.4	100.0	7	0.5

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

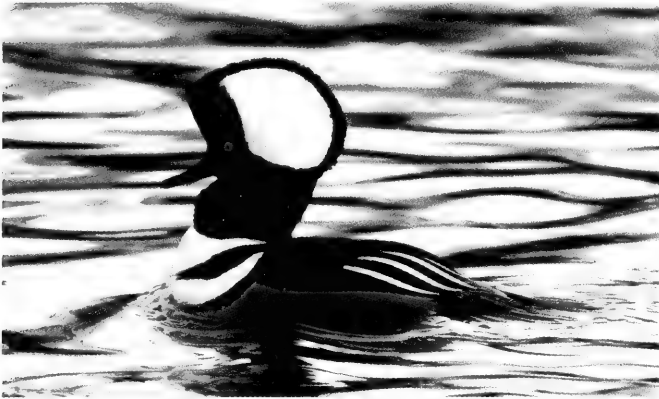


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Northern Pintail**



Dennis Oehmke

**Code: HOME**

**Rangewide Distribution:** southern half of Canada south to Mexico.

**ILLINOIS**

**Abundance:** fairly common migrant, uncommon winter and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** woods near lakes, ponds, swamps, and marshes.

**Nest:** tree cavity or nest box lined with grasses, leaves, and down.

**Eggs:** 10–12, white, unmarked (often nest-stained).

**Incubation:** 32–33 days.

**Fledging:** about 71 days.

While Hooded Mergansers generally breed in the forests of the northeastern U.S. and southeastern and southwestern Canada, it is most common in the upper Great Lakes region. The Hooded Merganser, like the Wood Duck, nests in tree cavities and also accepts boxes intended for Wood Ducks as nest sites. However, because it is a diving duck, its habitat requirements and feeding habits are considerably different from those of the Wood Duck. A variety of wooded areas with nearby water, such as cypress and tupelo swamps, beaver ponds, lakes, and tree-lined streams, provide suitable habitat. A major limitation for the Hooded Merganser is the quality and clarity of water, which must provide an adequate, visible supply of small fish, amphibians, and insects (Bellrose 1976). Historically, populations declined because

of overhunting and loss of forests; current populations appear stable (Dugger et al. 1994). Efforts to protect and restore wooded wetland areas through a variety of public and private efforts are necessary to enhance the breeding potential for this species.

**Illinois History**

According to historical accounts, the Hooded Merganser was widely but sparingly distributed as a breeding species in the state. The earliest breeding records were reported from Union County in 1875 (Nelson 1877). It was reported in eight counties throughout the state from 1861 to 1929 and 36 counties from 1930 to 1996 (Havera 1999). Based on a mail survey conducted in 1990, it nested in 14 (9%) of 151 public sites (Havera 1999). Nesting currently occurs in counties bordering the Mississippi, Illinois, Sangamon, and Ohio rivers (Havera 1999).

**Breeding Bird Survey Trends**

Waterfowl species are not adequately sampled by the BBS and the Hooded Merganser, though an increasingly common breeder in Illinois, is seldom reported as breeding because of its habitat and secretive nature. There are insufficient BBS data to estimate trends for this species in Illinois or the region.

*Credibility Index: IL = none and UM = none.*

**Distribution**

Breeding evidence for the Hooded Merganser is difficult to find and the atlas data is not indicative of its true distribution or abundance. It was reported in priority blocks in 11 counties. Since the atlas project, one or more broods have been documented at various locations throughout the state every year, including some encountered during the Spring Bird Count in early May (Kleen unpub.).

**Frequency**

Hooded Mergansers were reported from 14 (1.4%) priority blocks and 9 nonpriority blocks. Even though it was Confirmed as a breeding species in just 7 of the priority blocks, breeding probably occurred statewide where bottomland forest and suitable nest cavities exist. Breeding evidence for all the Confirmed priority block records was the observation of broods accompanying adult females. Because of the difficulty in locating nest cavities, the other blocks where breeding was recorded but not Confirmed may have been nesting localities as well.

## Breeding Evidence

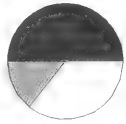
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	7	0.7	50.0	14	1.1
Probable	2	0.2	14.3	3	0.2
Possible	5	0.5	35.7	6	0.5
Totals	14	1.4	100.0	23	1.8

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

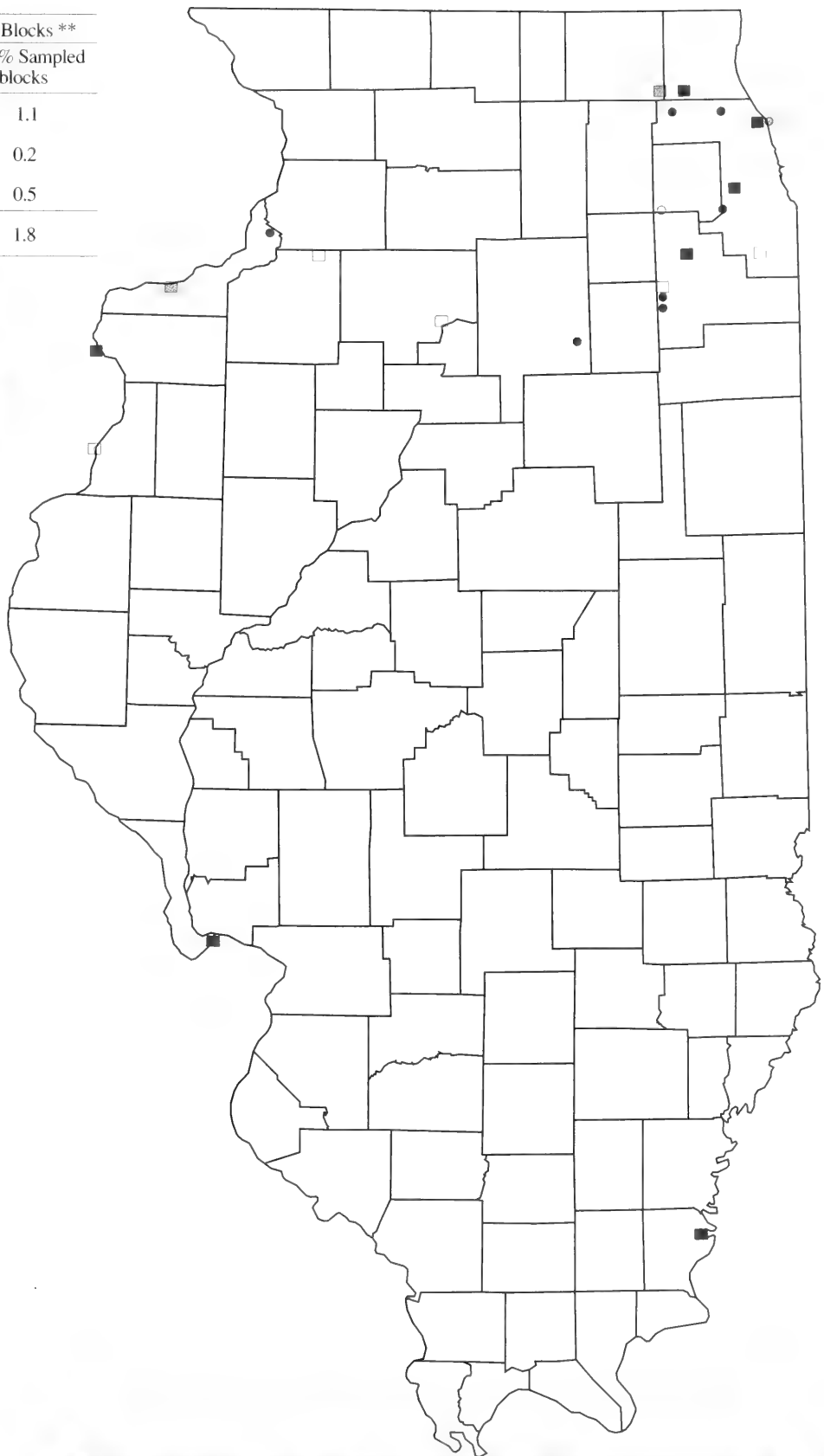


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Hooded Merganser**



Joe Milosevich

**Code: RUDU**

**Rangewide Distribution:** western and southern Canada, south through most of the U.S. into Central America.

**ILLINOIS**

**Abundance:** common migrant; uncommon winter resident, occasional summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** densely vegetated freshwater marshes; occasionally, sewage lagoons.

**Nest:** bulky and basketlike in emergent vegetation lined sparsely with finer materials, normally with concealing canopy and anchored to the vegetation.

**Eggs:** 6–8, creamy white, unmarked (nest-stained).

**Incubation:** 23–26 days.

**Fledging:** from 42 to 48 days.

This species breeds primarily in the prairie pothole region of North America but can be found breeding elsewhere in the western half of the U.S., southwestern and south-central Canada, and in Mexico. Male Ruddy Ducks are rust-colored, stiff-tailed ducks with white cheeks and blue bills. They have a habit of cocking their tails up—a behavioral trait that helps identify the species. Although Ruddy Ducks are divers, they are primarily vegetarians and feed on seeds, leaves, and tubers of sedges and pondweeds, and therefore require clear water to see their underwater food sources. They build floating nests in marshes and ponds with margins of emer-

gent vegetation. Ruddy Duck populations are stable or increasing throughout most of the breeding range in North America (Brua 2002). This species is highly dependent on wetlands in the prairie pothole region.

**Illinois History**

Like most other ducks, Ruddies occur in Illinois primarily as spring and fall transients using lakes for feeding and resting during their long migrations. According to historical accounts, the Ruddy Duck has been a somewhat regular breeding species in northeastern Illinois and an opportunistic, irregular breeding species in the rest of the state when suitable habitat was available at the appropriate time. The earliest record of breeding in Illinois was a brood observed near Waukegan in Lake County in 1875 (Nelson 1876). Since 1930, Ruddy Ducks have been recorded as nesting in nine counties scattered throughout the state (Havera 1999).

**Breeding Bird Survey Trends**

There is insufficient BBS data to estimate population trends for the Ruddy Duck in Illinois. The data for 1966–2000 indicate a decline in the upper Midwest population of –9.4% per year (significant,  $P = 0.03$ ), though the sample size is low. Waterfowl populations are not adequately sampled by the BBS.

*Credibility Index: IL = none and UM = 3.*

**Distribution**

The Ruddy Duck was a rare breeding species during the atlas project. It was recorded in priority blocks in six counties. This species was sporadic in occurrence and has a wider distribution than the atlas data indicate. A number of broods have been documented at several locations in northeastern Illinois prior to and after the atlas project.

**Frequency**

The Ruddy Duck was reported from 6 (0.6%) priority blocks and 13 nonpriority blocks. Breeding was Confirmed in 2 of the priority blocks, 1 each in Cook and Mason counties. The presence of single individuals or summering groups are more likely to be associated with nesting than the presence of territorial pairs (i.e., the 4 Probable records) and, therefore, it would be appropriate to consider the Possible records as potential nesting sites.



## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	2	0.2	33.3	8	0.6
Probable	1	0.1	16.7	4	0.3
Possible	3	0.3	50.0	7	0.5
Totals	6	0.6	100.0	19	1.5

\* 998 priority blocks

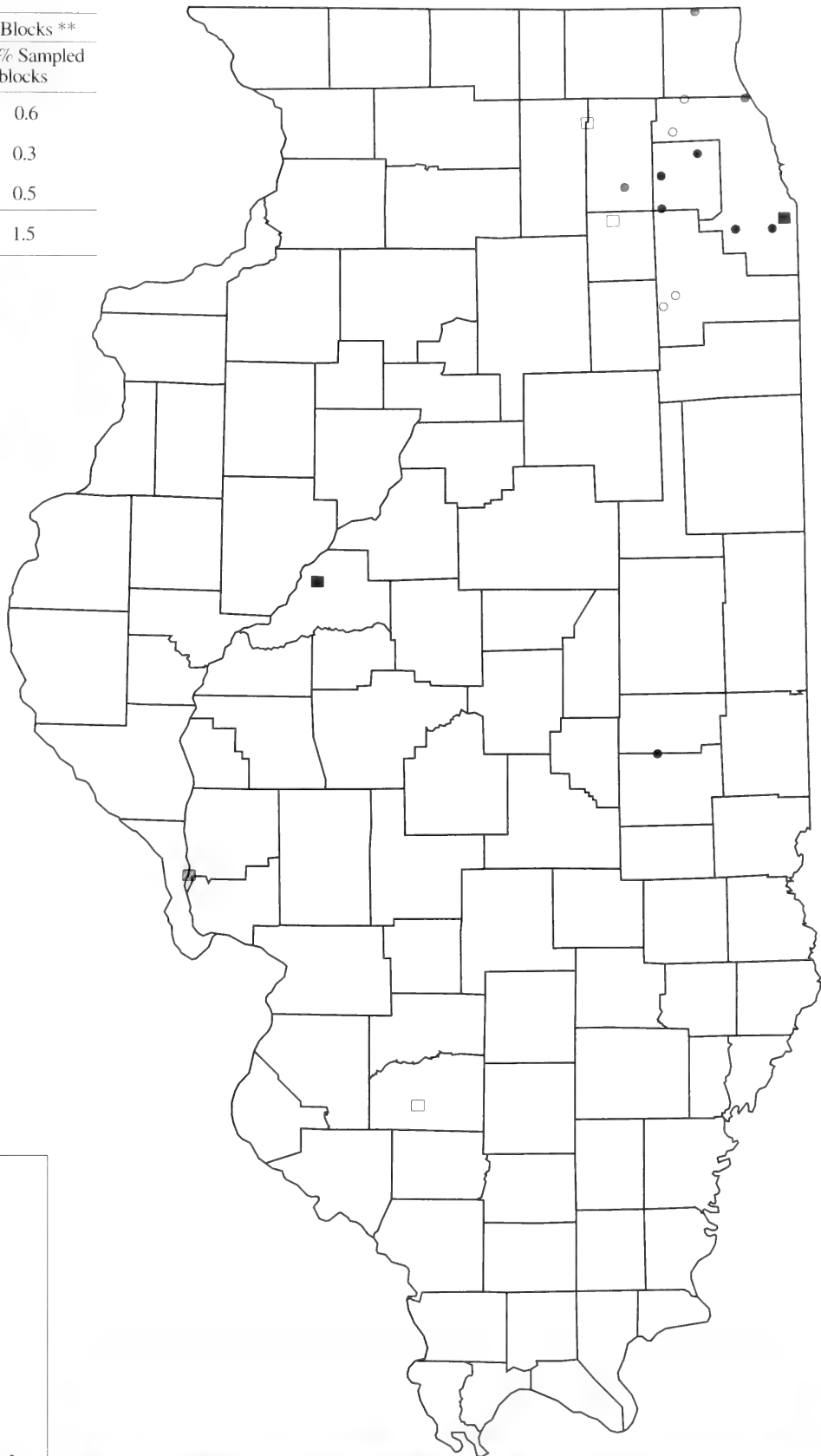
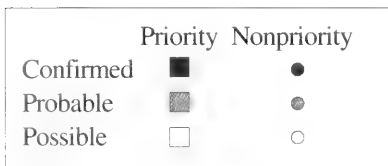
\*\* 1,286 total blocks (priority and nonpriority)



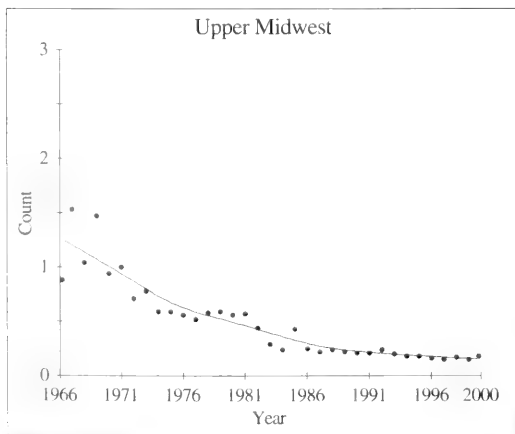
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



***Ruddy Duck***



Joe Milosevich

## Illinois History

Farris (1970) reported that more than 12,000 Gray Partridges were released in Illinois between 1906 and 1927. Over the years the birds spread in a westerly and southerly direction with the greatest numbers occurring in Lee and DeKalb counties. Farris also thought that Gray Partridge numbers would always be low because summers in Illinois are too hot and wet for this species. Gray Partridge were reported occasionally on Illinois Department of Natural Resources game bird surveys before 1998 but on only a few survey routes ( $\leq 3$ ) and in small numbers ( $< 40$ ). The Gray Partridge has never been easy to find in Illinois and during the last 10 years it has become even more difficult. The Spring Bird Count in 2000 reported only two birds and in 2001 only one bird, all in DeKalb County (Kleen 2000b, 2001b). Changing land uses and cropping systems may be more responsible for the rarity and decline of this species than the summer climate that Farris (1970) suggests.

## Breeding Bird Survey Trends

This rare species is uncommonly encountered and in such low numbers that the trend estimate is not considered reliable for Illinois. A trend of  $-7.8\%$  per year (nonsignificant,  $P = 0.42$ ) was estimated for the state for 1966–2000. For the upper Midwest, the population trend is estimated at  $0.1\%$  per year (nonsignificant,  $P = 0.95$ ) between 1966 and 2000.

*Credibility Index: IL = 3 and UM = 2.*

## Distribution

During the atlas project, the Gray Partridge was found in priority blocks in 19 counties, all in the northwestern part of the state. Individuals were reported as far south as Peoria and Knox counties. Since the atlas project, there have been few records of this species anywhere in Illinois.

## Frequency

The Gray Partridge was reported from 65 (6.5%) priority blocks and 10 nonpriority blocks. Breeding was Confirmed in 32 (3.2%) of the priority blocks and likely occurred in the majority of other blocks in which it was reported.

### Code: GRPA

**Rangewide Distribution:** native of Europe and Asia; introduced into North America and occurs in southern Canada and northern U.S.

### ILLINOIS

**Abundance:** formerly uncommon, now rare permanent resident in northern counties.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** grasslands and cultivated flatlands with hedgerows and edges.

**Nest:** a scrape lined with leaves, straw and grass, on ground.

**Eggs:** 15–17, olive or dull white, unmarked.

**Incubation:** 23–25 days.

**Fledging:** from 13 to 15 days.

The Gray Partridge, also known as the Hungarian Partridge, is a nonmigratory game species that was introduced into North America in the early 1900s. Populations in North America are found in the northern U.S. and southern Canada, but are concentrated in the central prairie region. This grassland species has adapted to intensive agricultural areas where it inhabits cultivated fields, fencerows, and edges. It nests on the ground in grassy areas and hayfields. Gray Partridges mainly eat seeds; however, insects are an important food source for chicks.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	32	3.2	49.2	36	2.8
Probable	21	2.1	32.3	24	1.9
Possible	12	1.2	18.5	15	1.2
Totals	65	6.5	100.0	75	5.8

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

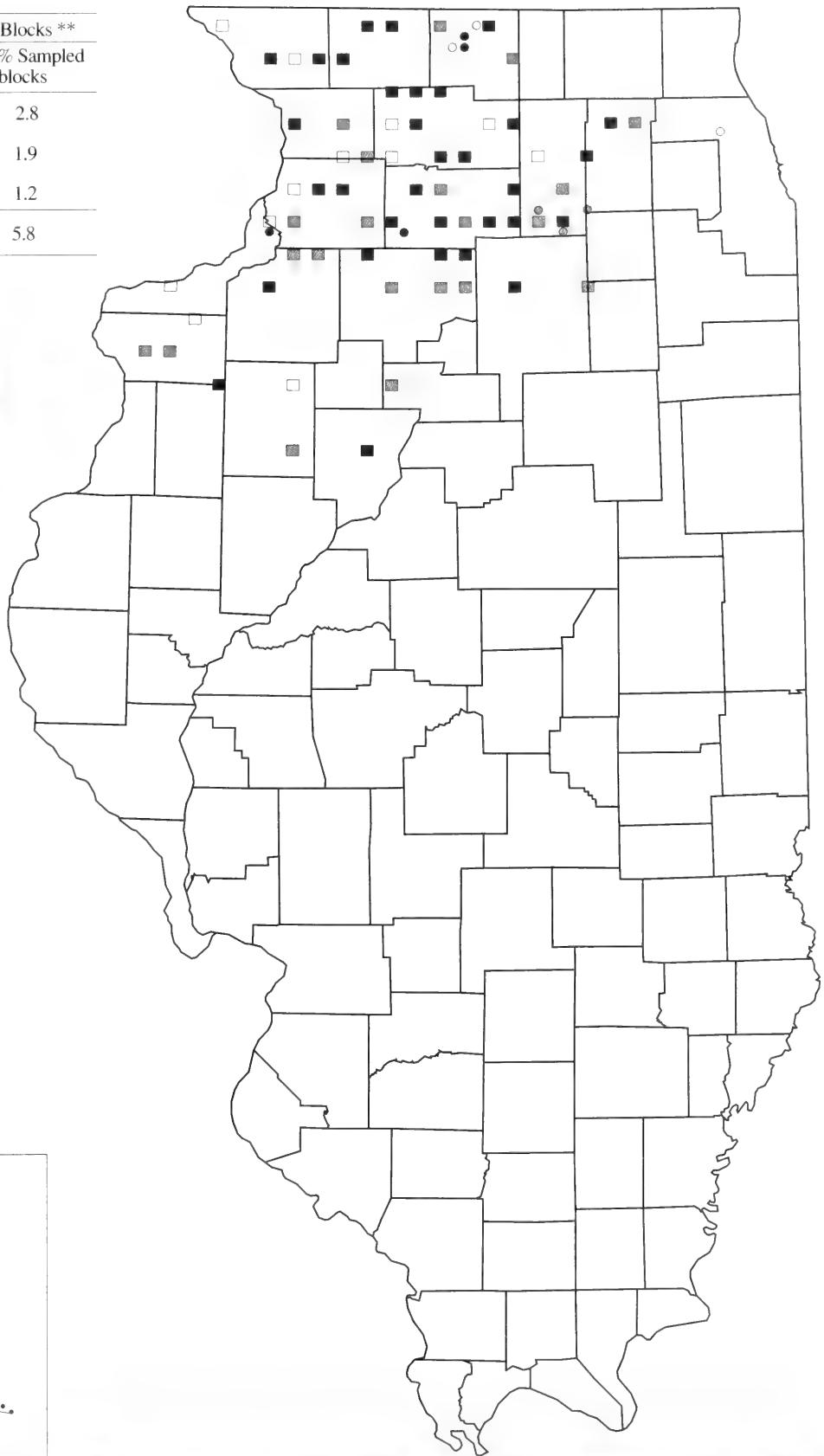


% of 998 sampled priority blocks (gray = no records for this species)

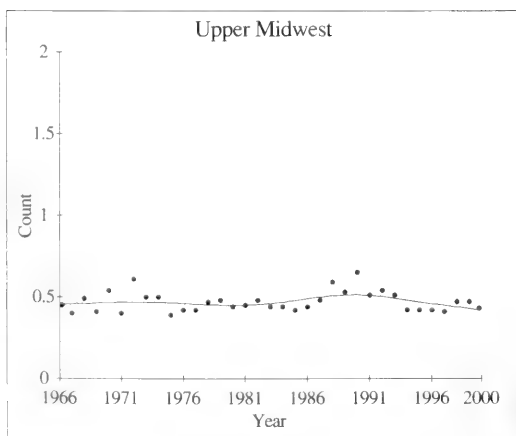


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Gray Partridge**



Richard Day / Daybreak Imagery

**Code: RNPH**

**Rangewide Distribution:** native of Asia; introduced elsewhere including North America: extreme southern Canada south through northern half of the U.S., uneven distribution in southwestern U.S.

**ILLINOIS**

**Abundance:** fairly common permanent resident in north and central; mostly absent south of about Effingham County.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open country, cultivated and grassland areas.

**Nest:** a scrape sometimes lined with leaves and grass, on ground.

**Eggs:** 10–12, brownish olive (occasionally pale blue), unmarked.

**Incubation:** 23–25 days.

**Fledging:** about 12 days.

The Ring-necked Pheasant is native to Asia but now has a worldwide distribution because of introductions by humans. They were successfully introduced in North America in the 1880s and are presently found primarily in southern Canada and the northern and western U.S. This species is a nonmigratory game bird that is better adapted to an intensive agricultural setting than most of our native gallinaceous species (e.g., the Greater Prairie-Chicken and the Northern Bobwhite). Ring-necked Pheasants nest on the ground in dense vegetation. Large hayfields, pastures, and fallow fields are preferred nesting habitats, but they also utilize strips of

vegetation along fencerows, ditches, and roadways. Loss of habitat due to farming practices, which changed from small diversified farms to clean monocultures during the latter part of the 1900s, has negatively impacted the pheasant population. The destruction and decline in nesting and wintering cover are serious threats to the population (Jackson et al. 1996). Managing roadsides for pheasant habitat and restoration and creation of grasslands are important conservation measures for this species.

**Illinois History**

Ring-necked Pheasants were first introduced into Illinois around 1890. The pheasant population grew and expanded during the early 1900s and peaked in the early 1960s. Since then, the population has slowly and steadily declined because of intensive farming practices, which reduced habitat, and severe winters, especially those in the late 1970s. By the early 1980s the population was only a fraction of what it had been three decades earlier. Detailed information about the natural history, population, and distribution of this species in Illinois can be found in Warner (1981).

**Breeding Bird Survey Trends**

The trend estimate is  $-2.0\%$  per year (nonsignificant,  $P = 0.34$ ) for the pheasant in Illinois for 1966–2000. BBS data from the upper Midwest indicate that the regional population has declined at an annual rate of  $-2.2\%$  (significant,  $P < 0.01$ ) from 1966 to 2000. Illinois Department of Natural Resources call-count surveys indicate similar trends for the state.

*Credibility Index: IL = 2 and UM = 1.*

**Distribution**

The Ring-necked Pheasant occurred in the northern two-thirds of Illinois during the atlas project. Although there have been numerous attempts to introduce pheasants in southern Illinois, the species has been unable to sustain a population there and the southern records are probably the result of releases by sportsman groups.

**Frequency**

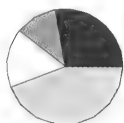
Ring-necked Pheasants were reported in 556 (55.7%) priority blocks and 121 nonpriority blocks. Breeding was Confirmed in 276 (27.7%) of the priority blocks, with the observation of broods the most commonly used evidence criterion (252 FL records). Because crowing males regularly announce their presence, pheasants were relatively easy to detect. The atlas results may be somewhat misleading since some records may be of released game-farm birds that were not likely to survive to the following year.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	276	27.7	49.6	337	26.2
Probable	116	11.6	20.9	149	11.6
Possible	164	16.4	29.5	191	14.9
Totals	556	55.7	100.0	677	52.6

\* 998 priority blocks

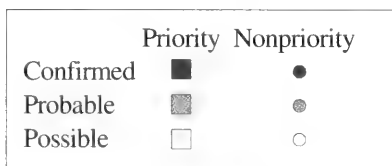
\*\* 1,286 total blocks (priority and nonpriority)



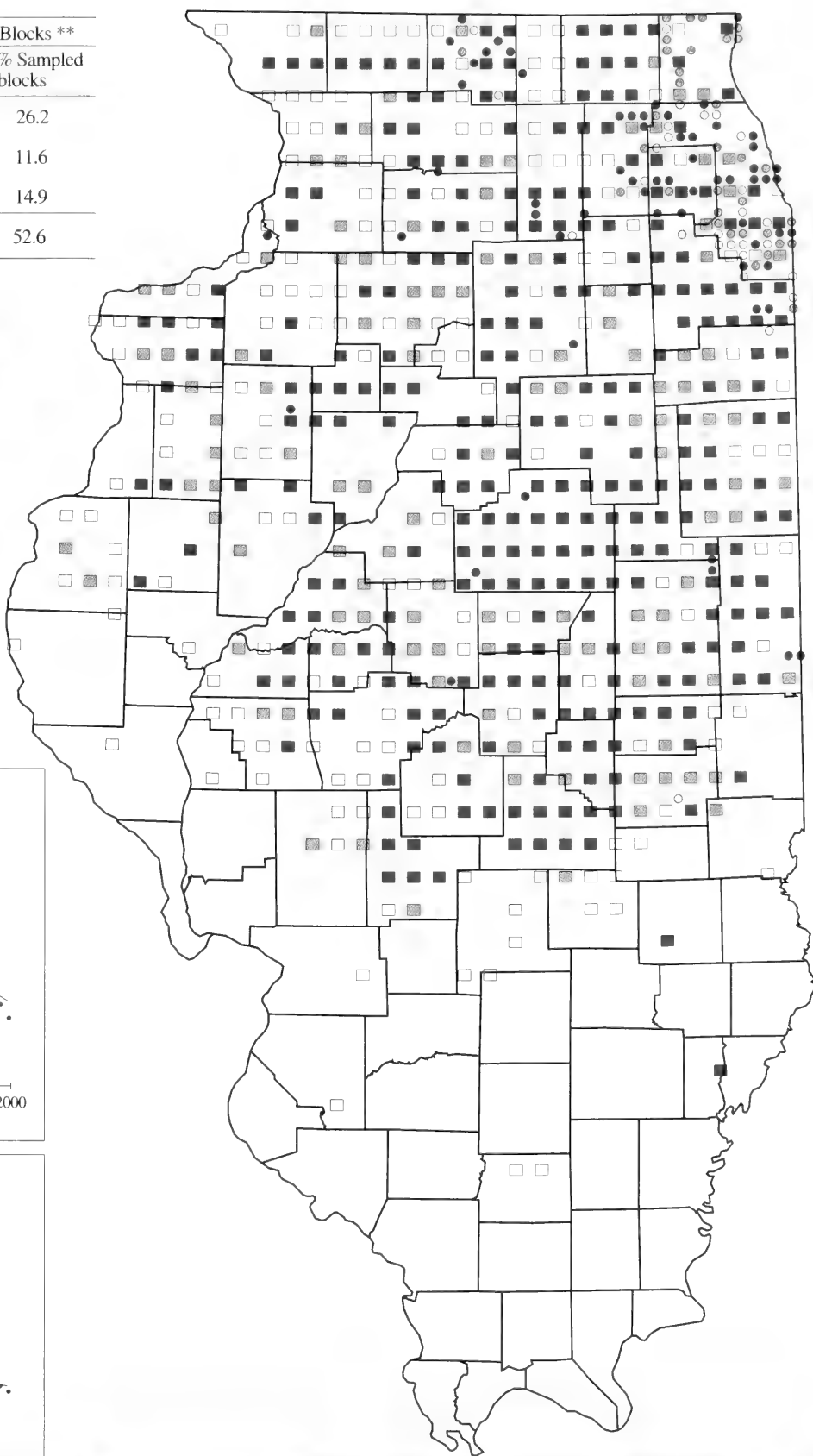
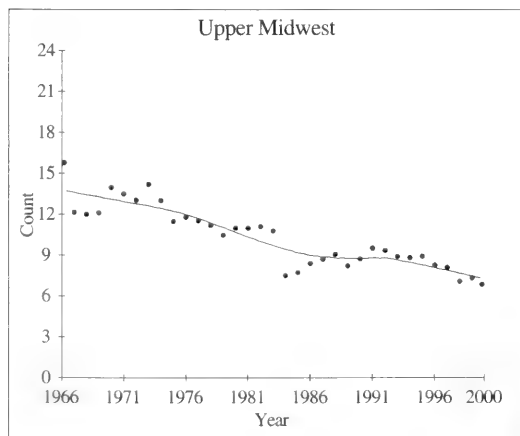
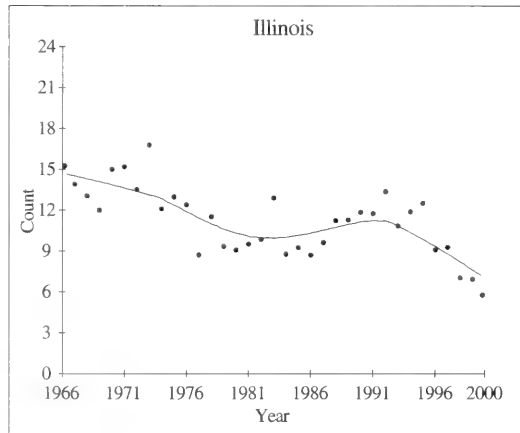
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Ring-necked Pheasant**



Pat Brown

**Code: RUGR**

**Rangewide Distribution:** Alaska, much of Canada, and the northern U.S.

**ILLINOIS**

**Abundance:** (formerly) very rare permanent resident in northern and southern Illinois.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous and deciduous-coniferous forests with dense understory.

**Nest:** a scrape lined with preened feathers, on ground at base of tree or log.

**Eggs:** 9–12, buff, lightly spotted with browns.

**Incubation:** 23–24 days.

**Fledging:** from 10 to 12 days.

Ruffed Grouse are nonmigratory game birds that are found in the deciduous and coniferous forests of North America. Their breeding range is generally most of Canada and the northern U.S. They are known for their courtship behavior and cryptic coloration. This woodland species inhabits deciduous or mixed deciduous-coniferous forests, especially young forests with brushy, dense undergrowth. Courtship drumming generally occurs during March and April. The drumming sound is made by the male as he stands on a log and fans the air with increasingly rapid wingbeats. Ruffed Grouse nest on the forest floor, usually at the base of a tree, stump, or boulder. Some populations experience cyclic fluctuations, perhaps generated by predator-prey relationships (Rusch et

al. 2000). Historically, the conversion of forest to other land uses, fragmentation of remaining woodlands, lack of early successional habitat, grazing, and market hunting have contributed to the decline of this species in parts of its range (Rusch et al. 2000).

**Illinois History**

Illinois is at the southern limit of the Ruffed Grouse's breeding range. During the late 1800s it was found "throughout the State in wooded districts, becoming more rare southward" (Ridgway 1895). Although it was recorded as common in the early 1900s (Cory 1909), that description was probably more appropriate for Wisconsin than Illinois. The Ruffed Grouse was apparently extirpated from the state in the early 1900s. During the latter part of the twentieth century, four attempts were made to reintroduce the species into the state. Birds from Indiana were released in Pope County (1953–58 and 1967), Alexander County (1972), Union County (1982), and Jo Daviess and Stephenson counties (1990) (Douglas Dufford, pers. comm.).

**Breeding Bird Survey Trends**

BBS routes do not adequately sample the remnant population that exists in Illinois. The surveys, which are mostly conducted in June, would not detect Ruffed Grouse, whose peak drumming period is March and April. In the upper Midwest the trend estimate for 1966–2000 is 1.4% per year (nonsignificant,  $P = 0.48$ ).

*Credibility Index: IL = none and UM = 2.*

**Distribution**

In Illinois the Ruffed Grouse was formerly a rare breeding species in forested areas, and later limited to disjunct populations in the extreme south and northwest. The birds found in Union County during the atlas project were a result of the flock released in the county in the 1980s. Ruffed Grouse may still be present in Jo Daviess and extreme southern Illinois counties, but they were not detected during the atlas project. Even though drumming Ruffed Grouse can be heard in early spring for quite some distance, their presence at other times of the year is difficult to detect.

**Frequency**

The Ruffed Grouse was reported from a single priority block in Union County, where it was Confirmed as breeding.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	100.0	1	0.1
Probable	0	0.0	0.0	0	0.0
Possible	0	0.0	0.0	0	0.0
Totals	1	0.1	100.0	1	0.1

\* 998 priority blocks

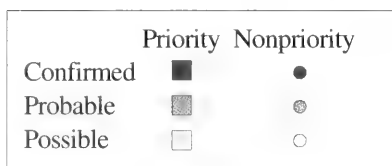
\*\* 1,286 total blocks (priority and nonpriority)



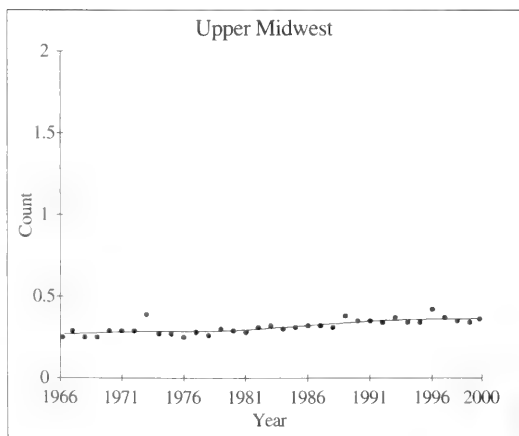
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

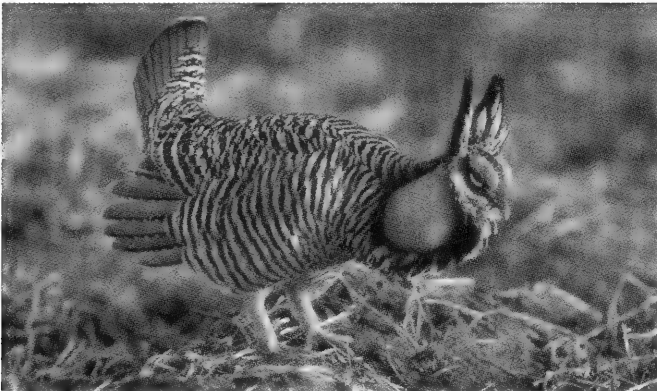


## Breeding Bird Survey Trends



**Ruffed Grouse**





Richard Day / Daybreak Imagery

**Code: GPCH**

**Rangewide Distribution:** upper Great Plains with a subspecies in southeastern Texas.

**ILLINOIS**

**Abundance:** rare and local permanent resident.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** open tallgrass prairies, grasslands.

**Nest:** a scrape or shallow depression lined with leaves, feathers and grass, on ground.

**Eggs:** 10–12, olive buff, sometimes spotted with fine brown specks.

**Incubation:** 23–24 days.

**Fledging:** weak flights at 2 weeks and strong flights at 3 weeks.

The Greater Prairie-Chicken was at one time widely distributed throughout the native prairies of central North America. As native prairie habitat was converted to cropland, Prairie-Chicken numbers declined precipitously and its current distribution is localized; this species is extirpated or nearly extirpated from 15 states and provinces (Shroeder and Robb 1993). The Greater Prairie-Chicken is known for its breeding behavior; males gather in early spring to boom and strut to attract females in courtship areas called leks. Greater Prairie-Chickens historically inhabited prairies interspersed with oak woodlands and currently occur in grasslands with medium to tall vegetation. Larger grasslands offer more protection from predation (Schroeder and Robb 1993). They nest on the ground in depressions lined with feathers, grass, and leaves. For the species to survive, suitable habitat must be acquired, preserved, and appropriately managed (Simpson and Esker 1997).

**Illinois History**

Prairies once covered about half of Illinois (Suloway et al. 2002) and supported an abundance of Greater Prairie-Chickens. For a period in the mid-1800s, the Greater Prairie-Chicken was one of the most abundant species in Illinois. They were so common that Ridgway (1895) thought it superfluous to discuss them further. Prairie-Chickens benefited from the clearing of the forests, reaching peak numbers about 1860 (Bohlen 1989; Westemeier and Edwards 1987; Dinsmore 1994). With the loss of prairies the population declined so drastically between 1860 and 1900 that by 1900 they were considered to be on the brink of extinction (Ridgway 1915). Continued loss, reduction in quality, and fragmentation of grassland habitat and isolation of local populations have negatively impacted this species up to the present time. Because of the very small population and the lack of nesting habitat, the Greater Prairie-Chicken is listed as an endangered species in Illinois. The remaining population in Illinois, a small remnant of what it used to be, now survives on intensely managed preserves in the south-central part of the state. In the early 1990s, birds from similar midwestern populations were introduced into the Illinois population to improve hatchability of clutches and sustain the Illinois population (Bouzat et al. 1998). In 2000, the Illinois population consisted of 107 booming males and a similar number of females on 15 leks in three counties (S. Simpson, pers. comm.). The efforts of the Illinois Natural History Survey, Illinois Department of Natural Resources, Prairie Chicken Society, Illinois Audubon Society, and The Nature Conservancy have prevented this species from being extirpated from the state.

**Breeding Bird Survey Trends**

BBS data are insufficient to estimate trends for the Greater Prairie-Chicken population in Illinois. The trend estimate for the upper Midwest for 1966–2000 is  $-5.7\%$  per year (nonsignificant,  $P = 0.29$ ).

*Credibility Index:* IL = none and UM = 3.

**Distribution**

The Greater Prairie-Chicken population is limited to three small areas in southwestern Jasper County, northeastern Marion County, and southeastern Effingham County. Periodically, isolated flocks of five or fewer chickens have occurred at sites in adjacent counties but most do not persist longer than a few years.

**Frequency**

The single atlas record for the Greater Prairie-Chicken was from a priority block located in Jasper County, where it was Confirmed as breeding.

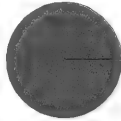


## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	100.0	1	0.1
Probable	0	0.0	0.0	0	0.0
Possible	0	0.0	0.0	0	0.0
Totals	1	0.1	100.0	1	0.1

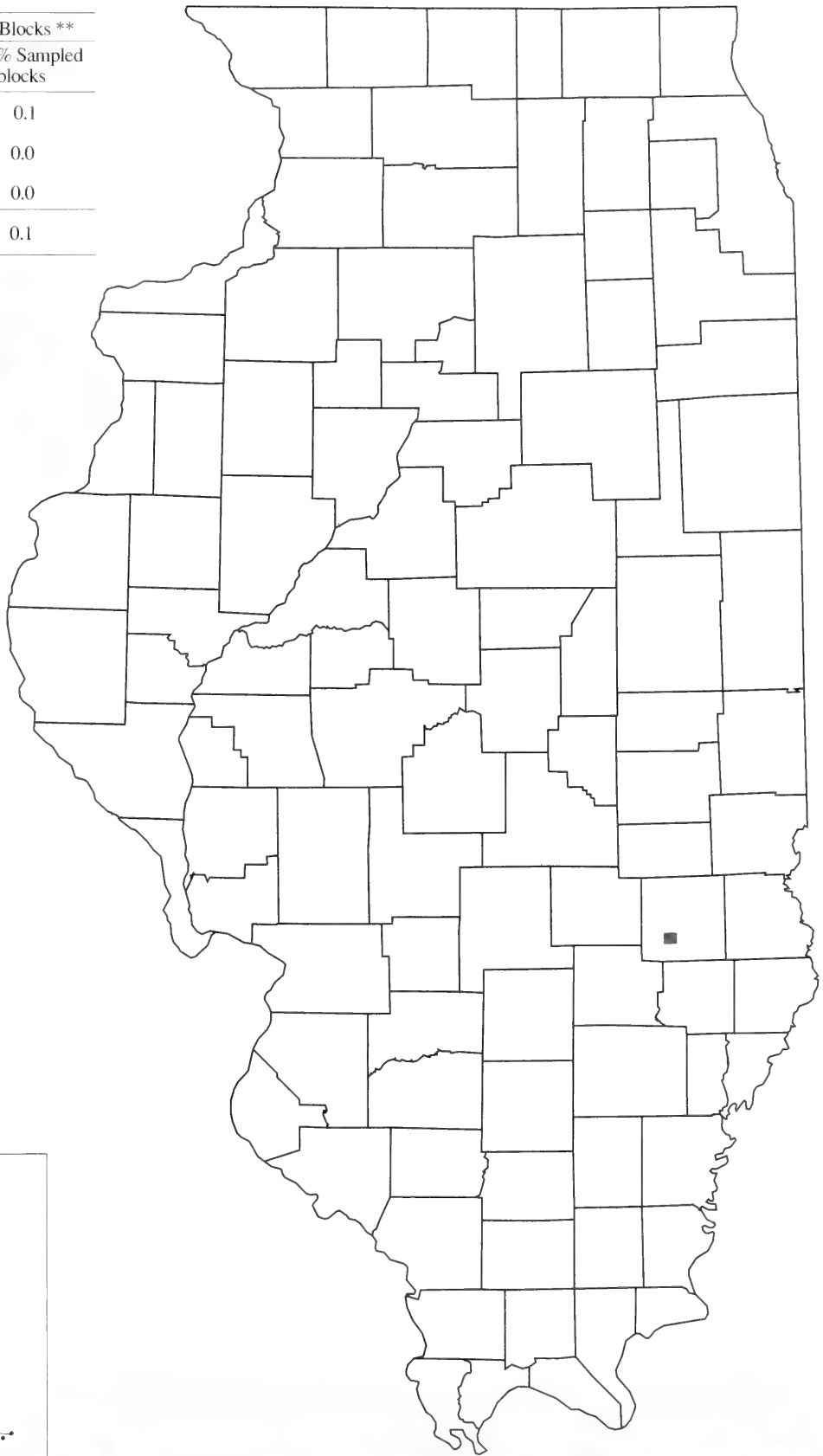
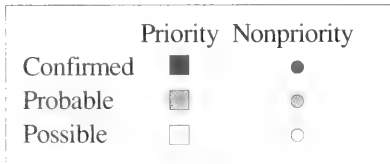
\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

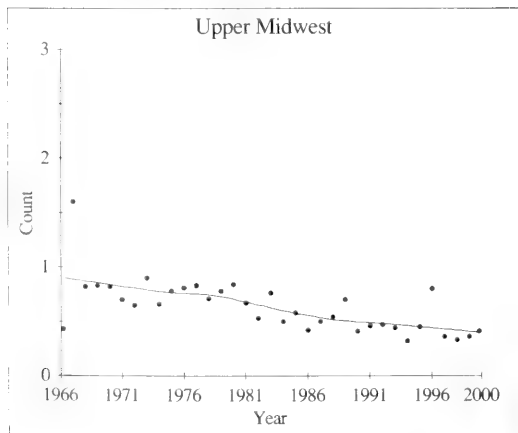


% of 998 sampled priority blocks (gray = no records for this species)

% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Greater Prairie-Chicken**



Michael Jeffords

**Code:** WITU

**Rangewide Distribution:** most of the U.S. south of Canada and into Mexico, spotty in western U.S.

**ILLINOIS**

**Abundance:** uncommon permanent resident, more common in south but increasing in central and north

**Endangered/Threatened Status:** none

**Breeding Habitat:** open areas at edge of deciduous or coniferous woods.

**Nest:** a scrape or shallow depression lined with dead leaves and grass, on ground.

**Eggs:** 10–12, buff to white, marked with dull brown

**Incubation:** 27–28 days

**Fledging:** from 6 to 10 days

The Wild Turkey is native to North America and breeds from southern Canada to central Mexico, including much of the U.S. east of the Rockies. It is a large nonmigratory gamebird that often occurs in large flocks, especially in the winter, and wanders over a fairly large home range. Destruction and alteration of habitat and uncontrolled hunting reduced the Wild Turkey population in the eastern U.S. so that it occupied only a small fraction of its original range by 1948 (Jackson et al. 1996). Reintroductions and better management methods have led to the restoration of this species in many states, including Illinois. Turkeys mostly utilize heavily wooded areas, but are also found in woodland openings, forest edge, and margins of farm fields. They forage for nuts, seeds, grass, and insects and are most common in forests with oaks or other nut-bearing trees as well as in corn and soybean fields. In spring, the male turkey gobbles and struts with tail fanned. Nests are placed on the

ground in forests with grassy openings and open fields nearby.

**Illinois History**

Although once an abundant species, the Wild Turkey was all but extirpated in Illinois by 1900 (Ridgway 1895; Cory 1909). Loss and fragmentation of forested habitat and year-round hunting were the primary reasons for the drastic declines in population. For several decades there were no Wild Turkeys in Illinois. Between 1954 and 1958, thousands of game-farm birds were released but the reintroduction effort failed. In 1959, 65 wild-trapped birds from Mississippi, Arkansas, and West Virginia were released in southern Illinois and similar releases continued until 1967. This effort was successful in reestablishing the species in the state (Calhoun and Garver 1974). As the southern population flourished, birds from this population were trapped and released upstate. Wild Turkeys are now present statewide. The reestablishment of the Wild Turkey population in Illinois is a result of modern wildlife management techniques and the turkey's ability to adapt to smaller and fragmented forest habitat.

**Breeding Bird Survey Trends**

The BBS trend estimate for 1966–2000 for Illinois is 26.1% (significant,  $P < 0.01$ ) and 18.0% per year (significant,  $P < 0.01$ ) for the upper Midwest region. Because the turkey's peak breeding period is March through early May, the BBS program may not adequately sample this species.

*Credibility Index:* IL = 3 and UM = 2.

**Distribution**

Restoration efforts in southern Illinois followed by releases in forested locations throughout the state have established Wild Turkeys in practically every forested area of the state. Greatest concentrations are still near the release sites but the population continues to expand along wooded river corridors. Wild Turkeys are currently more widespread in Illinois than atlas records indicate. They were reported in priority blocks in half the counties in the state during the atlas project.

**Frequency**

Wild Turkeys were reported from 142 (14.2%) priority blocks and 17 nonpriority blocks. Breeding was Confirmed in 58 (5.8%) of the priority blocks. Three-fourths of the Confirmed records in priority blocks resulted from the observation of poults. Since turkeys are permanent residents, it is likely that most of the Probable and Possible breeding records represent breeding birds as well.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	58	5.8	40.8	69	5.4
Probable	21	2.1	14.8	23	1.8
Possible	63	6.3	44.4	67	5.2
Totals	142	14.2	100.0	159	12.4

\* 998 priority blocks

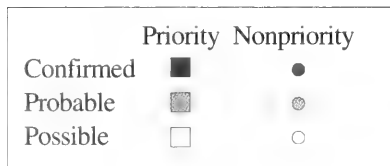
\*\* 1,286 total blocks (priority and nonpriority)



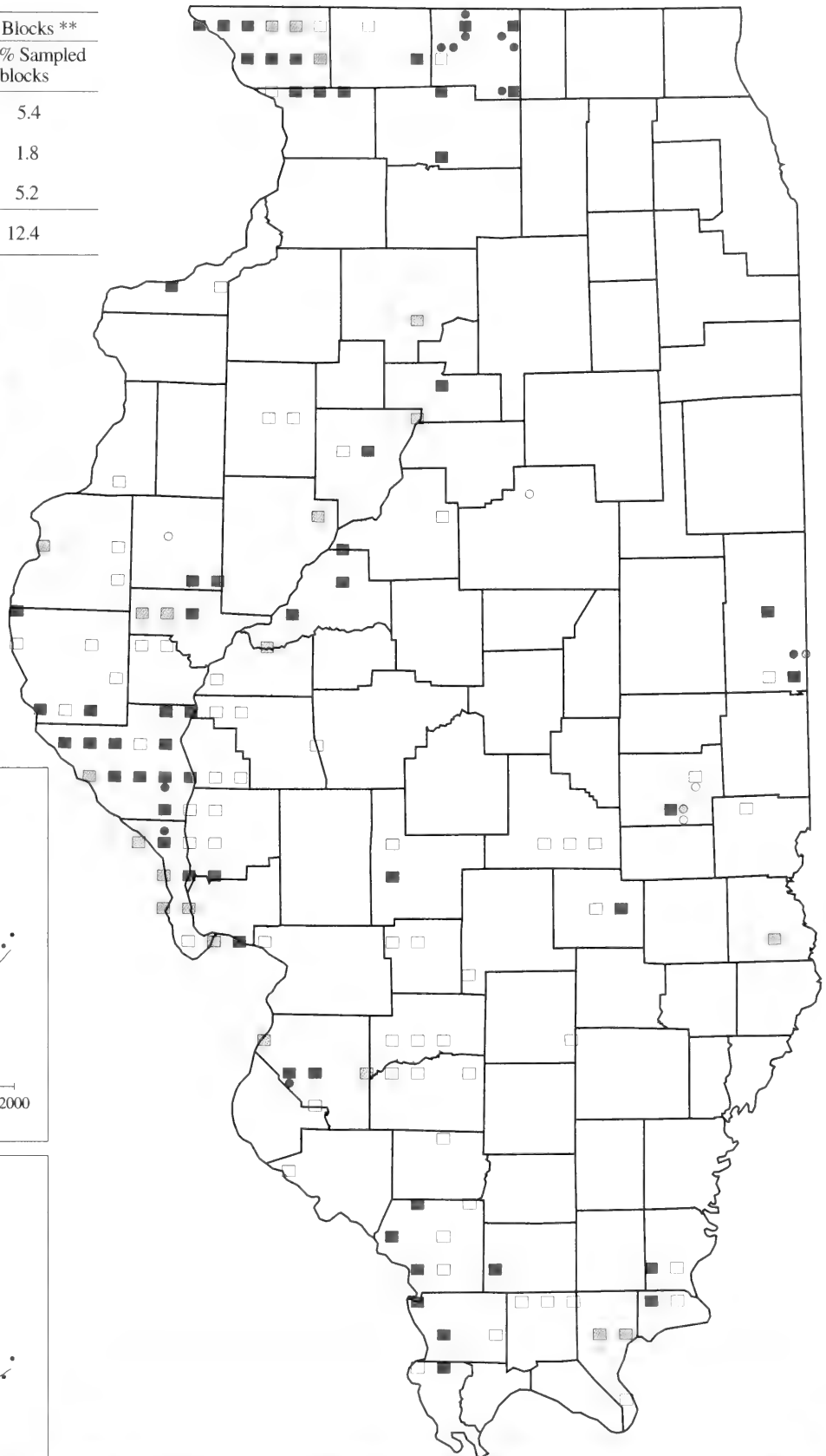
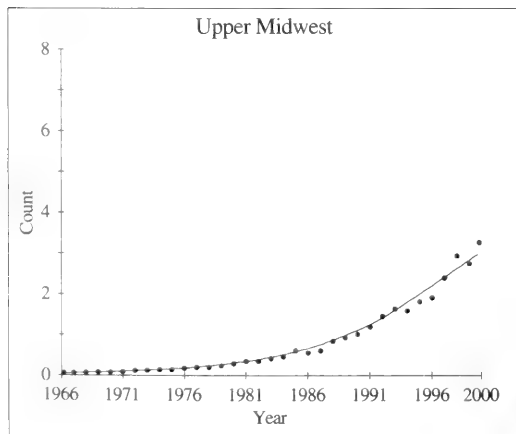
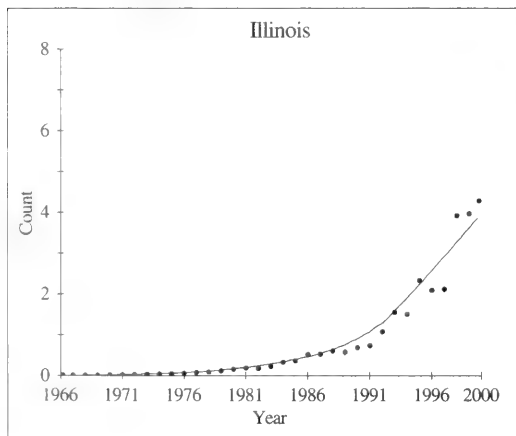
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Wild Turkey**

## Northern Bobwhite

## *Colinus virginianus*



Joe Milosevich

**Code:** NOBO

**Rangewide Distribution:** eastern half of the U.S., Mexico

**ILLINOIS**

**Abundance:** fairly common permanent resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** tall grasslands, brushy fields, open woodlands, and hedgerows.

**Nest:** a scrape or shallow depression lined with grass, on ground, concealed by woven arch of vegetation.

**Eggs:** 10–16, white to creamy (occasionally buff), unmarked.

**Incubation:** 23–24 days.

**Fledging:** about 6 to 7 days.

The Northern Bobwhite, an important gamebird in North America, is a widely distributed breeding species throughout the eastern half of the U.S. and eastern Mexico. The whistled “bob-white” or “ah-bob-white” of the male is a familiar sound in spring and summer to those who spend time in the country. The species occurs in open and semi-open habitats with early successional brushy areas, open grasslands, and woody edges its preferred habitat. The Northern Bobwhite, often called quail, is a permanent, nonmigratory resident. It nests on the ground in fairly open habitat with dense cover nearby. Except during the nesting season, bobwhites feed and roost in coveys that may include as many as 20 birds. In most of the U.S. the population of this species is declining significantly and is highly fragmented because of loss or degradation of habitat in part due to current farming and forestry practices (Brennan 1999). Winter survival also affects population size. Population declines occur during cold winters with extensive snow cover, and even more so

when such winters occur back-to-back (Roseberry and Klimstra 1984).

**Illinois History**

In the late 1800s the Northern Bobwhite was a common resident throughout Illinois (Ridgway 1895; Cory 1909). During the early to mid-1900s, it was still common, more so in the southern portion of the state (Graber and Graber 1963). From 1955 to 1969 the species was most common in the southern and western portions of the state (Preno and Labisky 1971). During the 1950s and 1960s there were at least three major fluctuations in the bobwhite population with highs following the lows two to four years later. The current population is still declining due to changing land use, reduction in the diversity of agricultural crops, cropping methods, and loss of both quantity and quality of its preferred habitat.

**Breeding Bird Survey Trends**

Bobwhite may be better sampled by the BBS than other upland gamebird species because of their slightly later and persistent calling behavior. The Illinois and upper Midwest populations have declined during 1966–2000 and the two subintervals. The trend estimates for 1966–2000 indicate decreases of –1.9% per year (significant,  $P < 0.01$ ) for Illinois and –2.6% per year (significant,  $P < 0.01$ ) for the upper Midwest. The severe declines that occurred after the winters of 1976 to 1979 are reflected on the BBS graphs. Trends derived from Illinois Department of Natural Resources call-count survey are in agreement with BBS estimates.

*Credibility Index:* IL = 2 and UM = 2.

**Distribution**

The Northern Bobwhite was widely distributed throughout the southern and western portions of Illinois during the atlas project. It had not yet returned to its former abundance and distribution in the eastern and northern portions of the state following the severe winters of the late 1970s. Bobwhites were found in priority blocks in 99 of the 102 counties in the state.

**Frequency**

The Northern Bobwhite was reported from 745 (74.6%) priority blocks and 27 nonpriority blocks. This species was Confirmed as breeding in 203 (20.3%) of the priority blocks, with the observation of young birds accounting for 88% of these records (179 FL records). The bobwhite was readily detected because of the male’s frequent, easily identified call. Because the species is nonmigratory, the bobwhite likely bred in most of the blocks in which it was found.

## Breeding Evidence

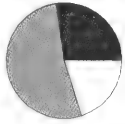
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	203	20.3	27.2	214	16.6
Probable	392	39.3	52.6	401	31.2
Possible	150	15.0	20.1	157	12.2
Totals	745	74.6	100.0	772	60.0

\* 998 priority blocks

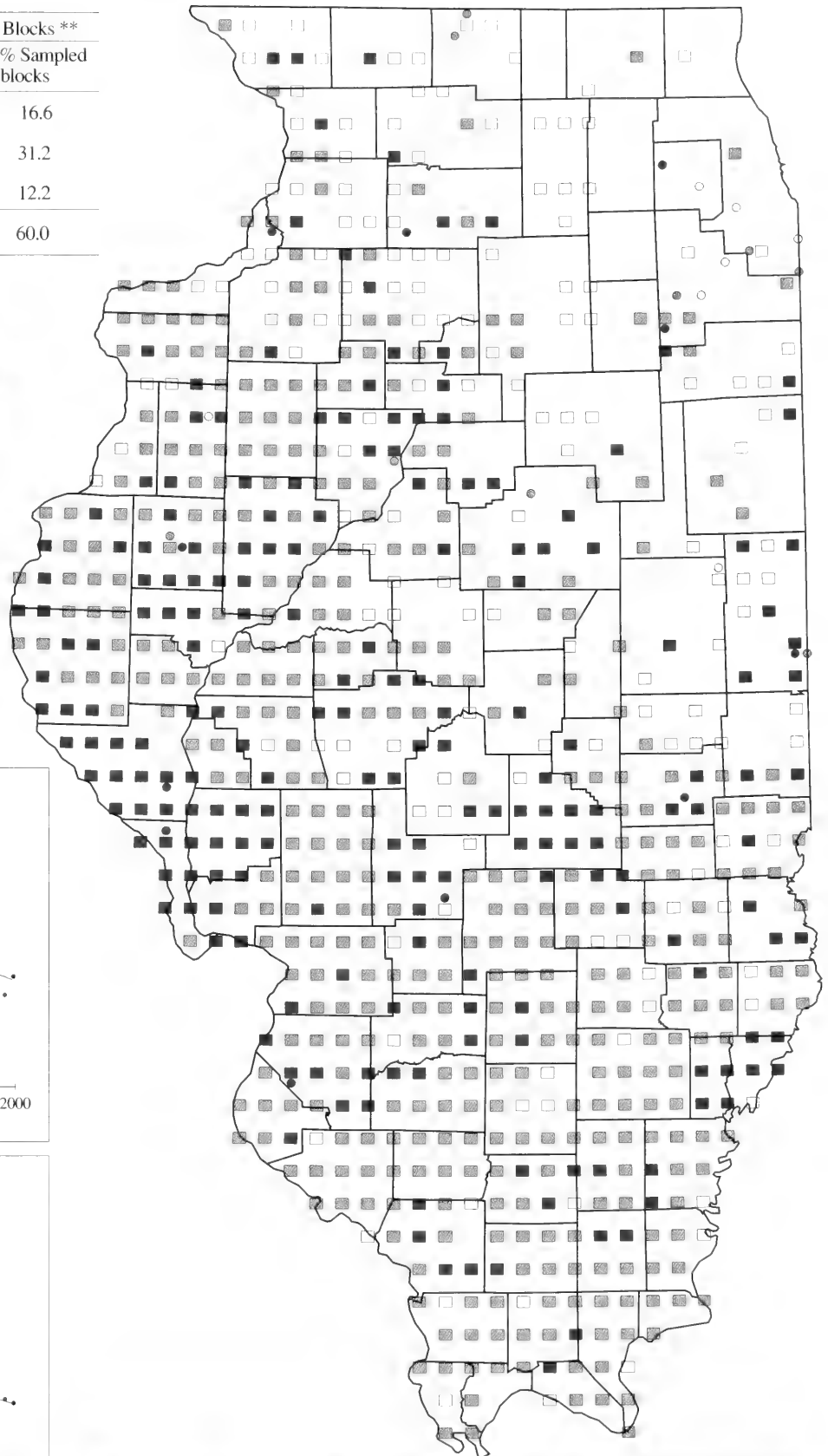
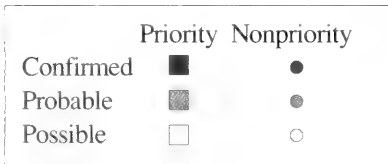
\*\* 1,286 total blocks (priority and nonpriority)



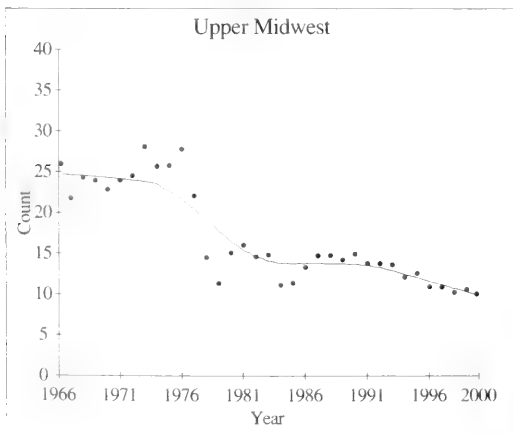
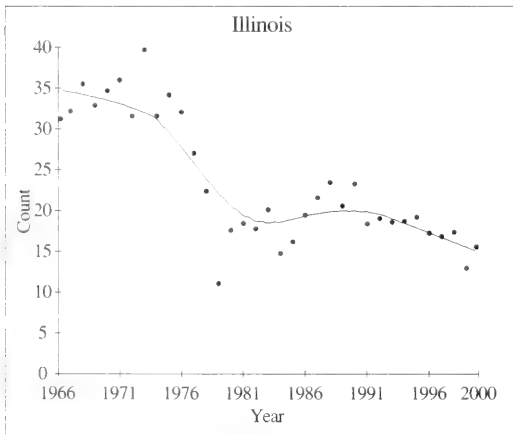
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



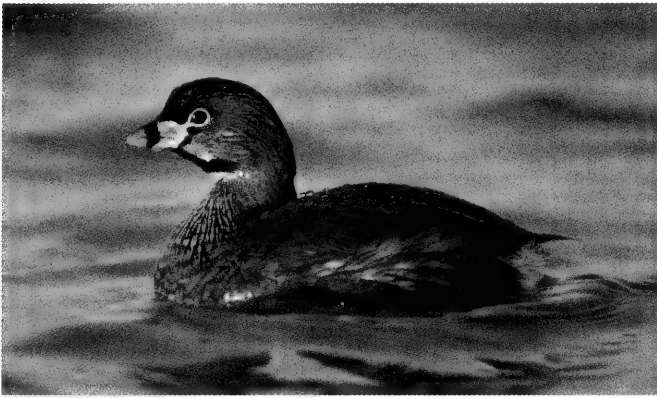
## Breeding Bird Survey Trends



**Northern Bobwhite**

## Pied-billed Grebe

## *Podilymbus podiceps*



Richard Day / Daybreak Imagery

**Code: PBGR**

**Rangewide Distribution:** central Canada, south through all of the U.S. to southern Brazil.

**ILLINOIS**

**Abundance:** common migrant and an uncommon summer and winter resident.

**Endangered/Threatened Status:** threatened.

**Breeding Habitat:** vegetated lakes, ponds, sluggish streams, and marshes.

**Nest:** inconspicuous, shallow, floating platform placed in marsh vegetation or anchored to dead logs or trees.

**Eggs:** 5–7, bluish white and chalky, often nest-stained (buff or brown).

**Incubation:** 23 days.

**Fledging:** not specifically known.

The Pied-billed Grebe is widely distributed throughout the Americas. It breeds from northern Canada to southern South America, including most of the U.S. It is a common inhabitant of marshes, lakes, and rivers. This secretive species occurs as a breeding species in calm bodies of water that support marsh or other well-vegetated habitat. Adult birds are most visible when swimming in open water; upon detection, they submerge, swim a considerable distance underwater, and then reappear near a vegetated edge where they are less conspicuous. The Pied-billed Grebe feeds on fish, crustaceans, frogs, and insects, usually by diving. Although they are most often detected as solitary breeders,

several nesting pairs may utilize highly suitable wetlands. In some years, after heavy spring rains, these birds opportunistically nest in flooded areas not normally available to them. The nest is a floating platform usually placed in emergent vegetation. Young are precocial and soon after hatching leave the nest to follow the adults or ride on their backs through the emergent vegetation.

**Illinois History**

The Pied-billed Grebe was formerly a common, widespread breeding species throughout the state, occurring along the borders of reedy sloughs, marshes, and rivers (Nelson 1876; Ridgway 1895; Cory 1909). In 1989 the Pied-billed Grebe was declared an endangered species in Illinois because of the widespread loss and deterioration of its wetland habitat. In 1994 its status was changed to threatened. Local populations remain vulnerable with the continued loss of marshes and wetlands.

**Breeding Bird Survey Trends**

This wetland species is not adequately sampled in Illinois by the BBS and has a small sample size and a low relative abundance. For Illinois the trend estimate over the long term (1966–2000) is 6.3% per year (nonsignificant,  $P = 0.60$ ). The long-term trend estimate for the upper Midwest is –2.1% per year (nonsignificant,  $P = 0.17$ ). The trend estimates for the two subinterval time periods are 14.1% per year (significant,  $P = 0.00$ ) during 1966–1979 and –6.7% per year (significant,  $P = 0.03$ ) during 1980–2000 in the upper Midwest.

*Credibility Index: IL = 3 and UM = 2.*

**Distribution**

During the atlas project, Pied-billed Grebes occurred most frequently in the wetlands in the northeastern part of the state and at scattered locations elsewhere. This species was reported in priority blocks in 22 counties during the atlas project. They are opportunistic breeders and may occur where permanent or temporary conditions provide adequate nesting habitat.

**Frequency**

Pied-billed Grebes were reported from 43 (4.3%) of the 998 priority blocks and 50 of the 288 nonpriority blocks. This species was Confirmed as breeding in 27 (2.7%) of the priority blocks. The Probable and Possible sightings may be potential breeding sites.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	27	2.7	62.8	58	4.5
Probable	8	0.8	18.6	14	1.1
Possible	8	0.8	18.6	21	1.6
Totals	43	4.3	100.0	93	7.2

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

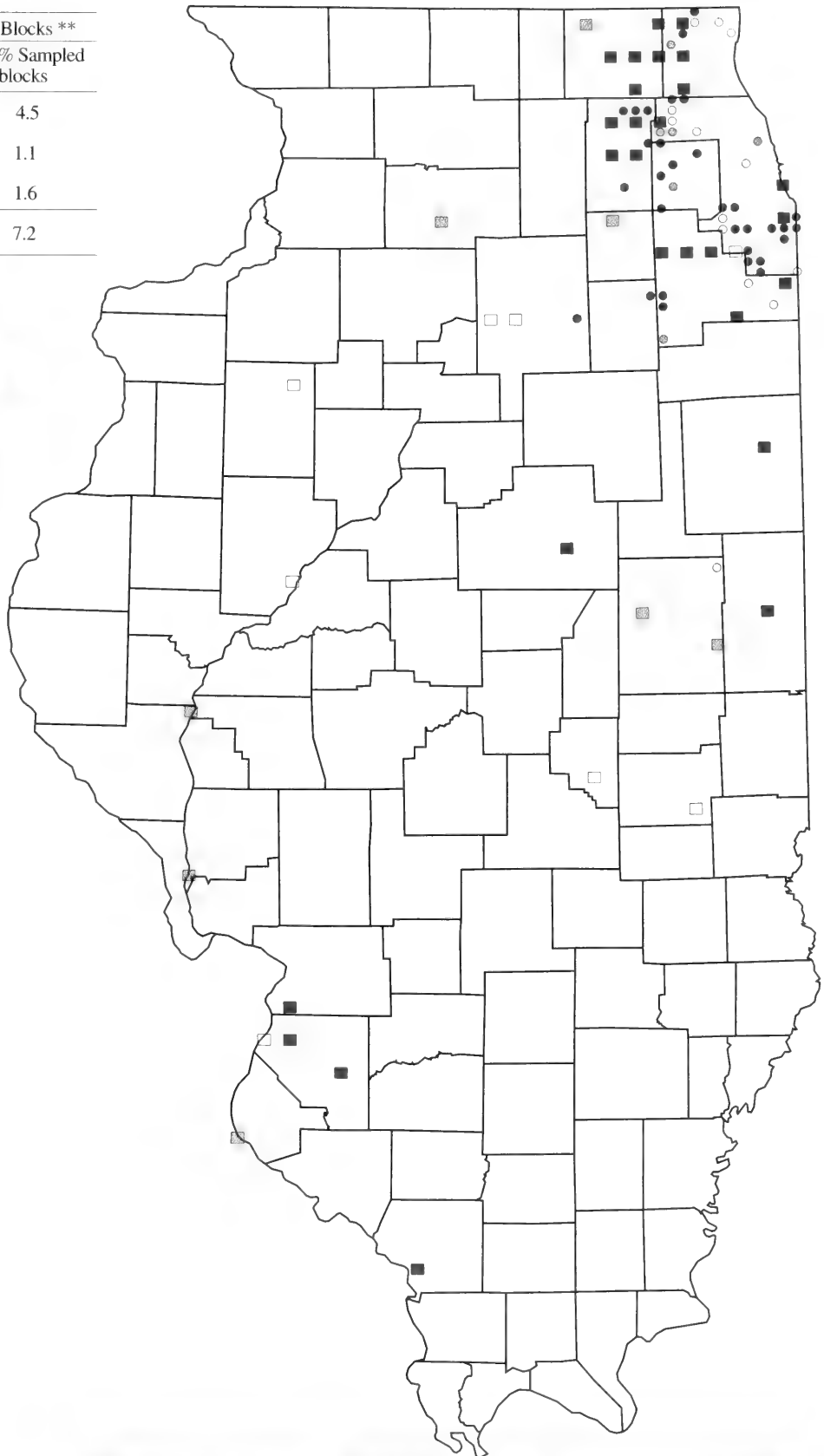


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Pied-billed Grebe**



## Double-crested Cormorant

## *Phalacrocorax auritus*



Joe Milosevich

### Code: DCCO

**Rangewide Distribution:** southern Canada, south through much of the U.S. to Mexico and Cuba.

### ILLINOIS

**Abundance:** a common migrant, fairly common but local summer resident, and uncommon winter resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** lakes, rivers, and swamps with an abundance of dead snags in open water or large trees on isolated and protected islands. Prefer to nest in colonies (loose or dense) sometimes with herons.

**Nest:** a rough platform of sticks lined with grasses or leaves placed in the crotch of a tree or in a man-made structure.

**Eggs:** 3–4, light blue or bluish white, unmarked.

**Incubation:** 25–29 days.

**Fledging:** from 35 to 42 days.

Double-crested Cormorants, common inhabitants of sea-coasts and inland waters, are large, primitive-looking aquatic birds. They are colonial breeders that breed in North America primarily along the seacoasts, in the north-central U.S., south-central Canada, and the Great Lakes region. Lakes, ponds, impoundments, slow-moving rivers, and coastlines are common breeding habitats. They may nest on the ground or in trees or artificial structures. Cormorants dive for fish and aquatic invertebrates. For most of the twentieth century, the interior population in North America was declining due to persecution and disturbance of colonies, but recently their numbers have increased (Jackson et al. 1996). As a result of the population increases, cormorants are perceived to be

causing economic impacts to sport and commercial fish stock and the aquaculture industry in some parts of their range (Tobin 1999).

### Illinois History

Double-crested Cormorants were primarily migrants and occasional winter residents, according to early accounts. Existing colonies were not only small, but few in number and occurred along the major river systems (Ridgway 1895; Herkert 1992). Cormorants experienced severe population declines in the 1950s and 1960s because of environmental contaminants (Anderson and Hickey 1972; Hatch and Weseloh 1999). By 1975, the remaining colony in Illinois consisted of a handful of nests in two dead snags in the Mississippi River in Carroll County (Kleen 1976a). In response to the extremely low population level, the cormorant was listed as an endangered species in Illinois in 1977. The population had recovered and the number and distribution of colonies had increased sufficiently for the species to be removed from the list in 1999. In 1991 there were six known active colonies (Herkert 1992). In 2000, there were approximately 1,150 nesting pairs in 8 known Illinois colonies (Kleen 2001a). Locations of known colonies with Double-crested Cormorants in 2000 are shown in Appendix K.

### Breeding Bird Survey Trends

The Double-crested Cormorant, as with other colonial nesting wetland species, is not adequately sampled by the BBS and the reliability of the trend estimates is low. The BBS trend estimate is 49.4% per year (nonsignificant,  $P = 0.15$ ) for Illinois from 1966 to 2000; sample size and relative abundance are low. In the upper Midwest, the trend estimate for 1966–2000 is 24.1% per year (nonsignificant,  $P = 0.23$ ). *Credibility Index:* IL = 3 and UM = 3.

### Distribution

During the atlas project, Double-crested Cormorants were found in northeastern Illinois, along the Illinois River, and to a lesser extent along the Mississippi River. It is expected that new colonies will appear in undisturbed sections of larger lakes and in isolated portions of other lakes, rivers, and sloughs as far south as the Ohio River.

### Frequency

The Double-crested Cormorant was reported from 15 (1.5%) priority blocks and 7 nonpriority blocks. It was Confirmed as breeding in one of the priority blocks near Peoria; that colony is no longer in existence. It was also Confirmed in 3 nonpriority blocks.

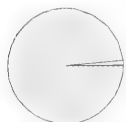


## Breeding Evidence

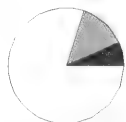
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	6.7	4	0.3
Probable	2	0.2	13.3	2	0.2
Possible	12	1.2	80.0	16	1.2
Totals	15	1.5	100.0	22	1.7

\* 998 priority blocks

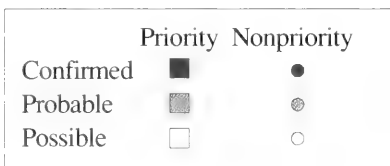
\*\* 1,286 total blocks (priority and nonpriority)



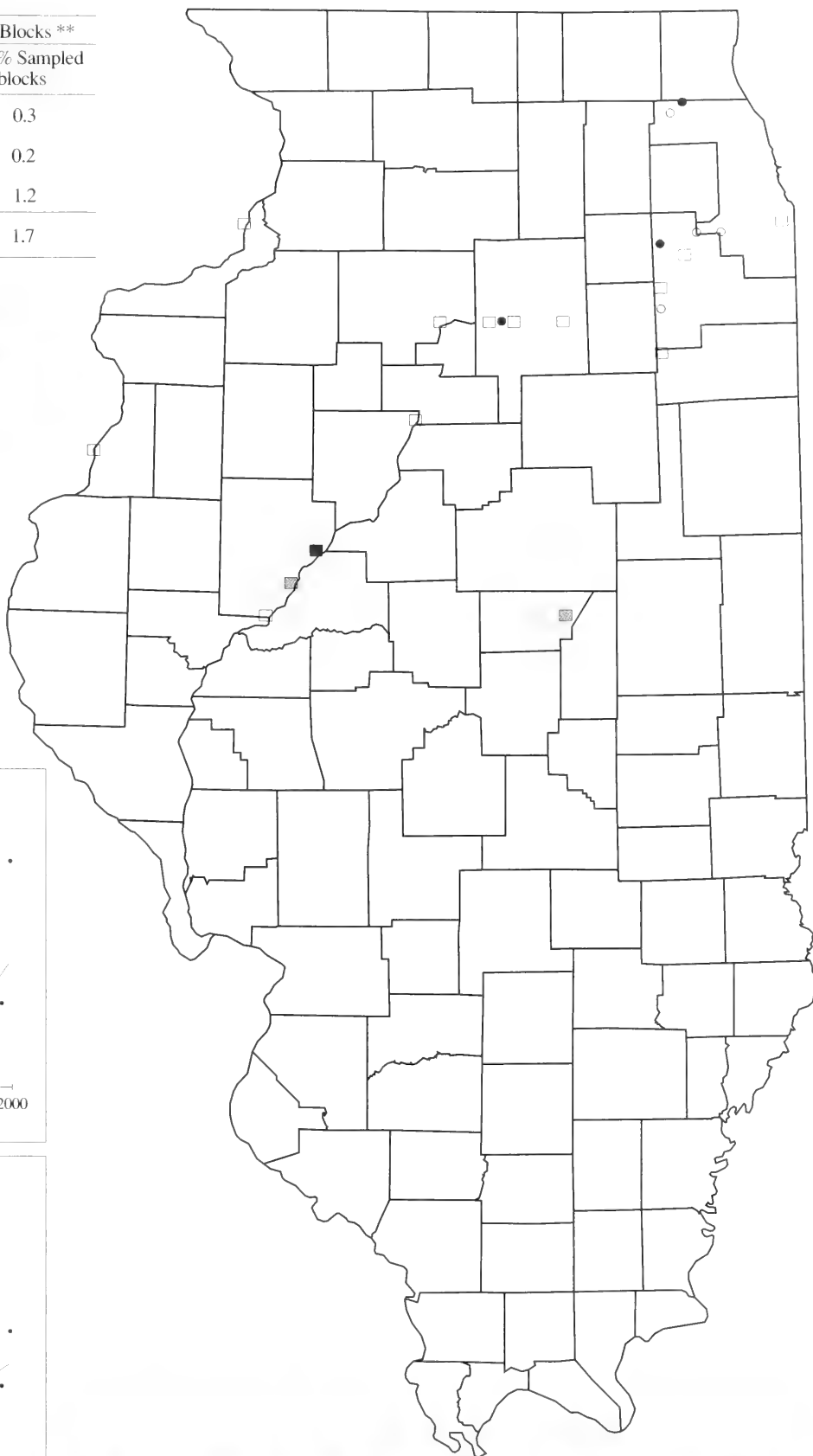
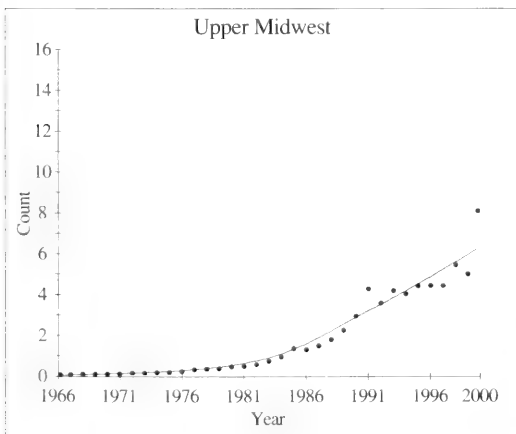
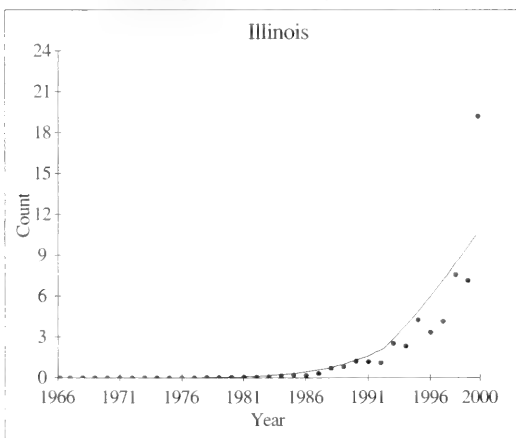
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Double-crested Cormorant**

# American Bittern

# *Botaurus lentiginosus*



Robert Randall

## Code: AMBI

**Rangewide Distribution:** southern half of Canada, south through much of the U.S. to Guatemala and Cuba.

## ILLINOIS

**Abundance:** fairly common migrant, rare and local summer resident.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** marshy areas and wet prairies with dense herbaceous cover, especially cattails.

**Nest:** Platform of sticks, grass, and sedge, on ground or over water/mud in tall vegetation.

**Eggs:** 4–5, buff to olive brown, unmarked.

**Incubation:** 24–28 days.

**Fledging:** not specifically known.

The American Bittern is a secretive and solitary species; even when known to be present in a wetland it is very difficult to detect. It breeds in freshwater wetlands in North America, generally in the northern half of the U.S. and the southern half of Canada. It prefers wetlands with tall emergent wetland vegetation with an abundance of vegetation-to-water edge (Gibbs et al. 1992b). The American Bittern forages for insects, amphibians, crayfish, and small fish by remaining motionless. When observed in roadside ditches or along the edges of lakes, it looks out of place when it assumes its cryptic, reedlike pose in such open

situations. During the breeding season, males call with a loud, booming sound. The American Bittern population has seriously declined due to loss of wetland habitat. Management needs include preservation of large (> 25 acres) shallow wetlands with dense emergent vegetation (Herkert 1992; Gibbs et al. 1992b).

## Illinois History

The American Bittern was once considered a common nesting species in the wet prairies and marshes of Illinois; it occurred most frequently in the northern counties (Nelson 1876; Cory 1909; Ford 1956). With the loss and degradation of its critical breeding and feeding habitats during the 1900s, the population had been nearly extirpated from the state. Because of its tenuous status as a breeding species and the loss and degradation of its required habitat, the American Bittern is listed as an endangered species in Illinois.

## Breeding Bird Survey Trends

This species is a rare habitat specialist with a low relative abundance and is not adequately sampled by the BBS. BBS data are not adequate to estimate a trend for Illinois. In the upper Midwest, BBS data indicate a decline in the population for the period 1966–2000 of –5.8% per year (significant,  $P < 0.01$ ) as well as for both subinterval time periods [–4.3% per year ( $P = 0.02$ ) for 1966–1979 and –5.8% per year ( $P < 0.01$ ) for 1980–2000].

*Credibility Index:* IL = none and UM = 2.

## Distribution

The American Bittern was a scarce and/or difficult species to find; there were priority block records in only five counties. Although potential nesting may occur in suitable habitat anywhere in the state, the species most likely occurs with greatest frequency in the northern counties. The paucity of atlas observations should not be construed to mean that the species is not present at those sites where suitable habitat exists. Currently, one of the most consistent Illinois nesting sites is the Prairie Ridge State Natural Area in Jasper County, which was not sampled during the atlas project.

## Frequency

The American Bittern was reported from six (0.6%) priority blocks and six nonpriority blocks. Although a known breeder in Illinois, it was not Confirmed in any block during the atlas project. However, the sites where this species was reported as Probable or Possible should be considered potential breeding sites.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	0	0.0	0.0	0	0.0
Probable	1	0.1	16.7	2	0.2
Possible	5	0.5	83.3	10	0.8
Totals	6	0.6	100.0	12	0.9

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

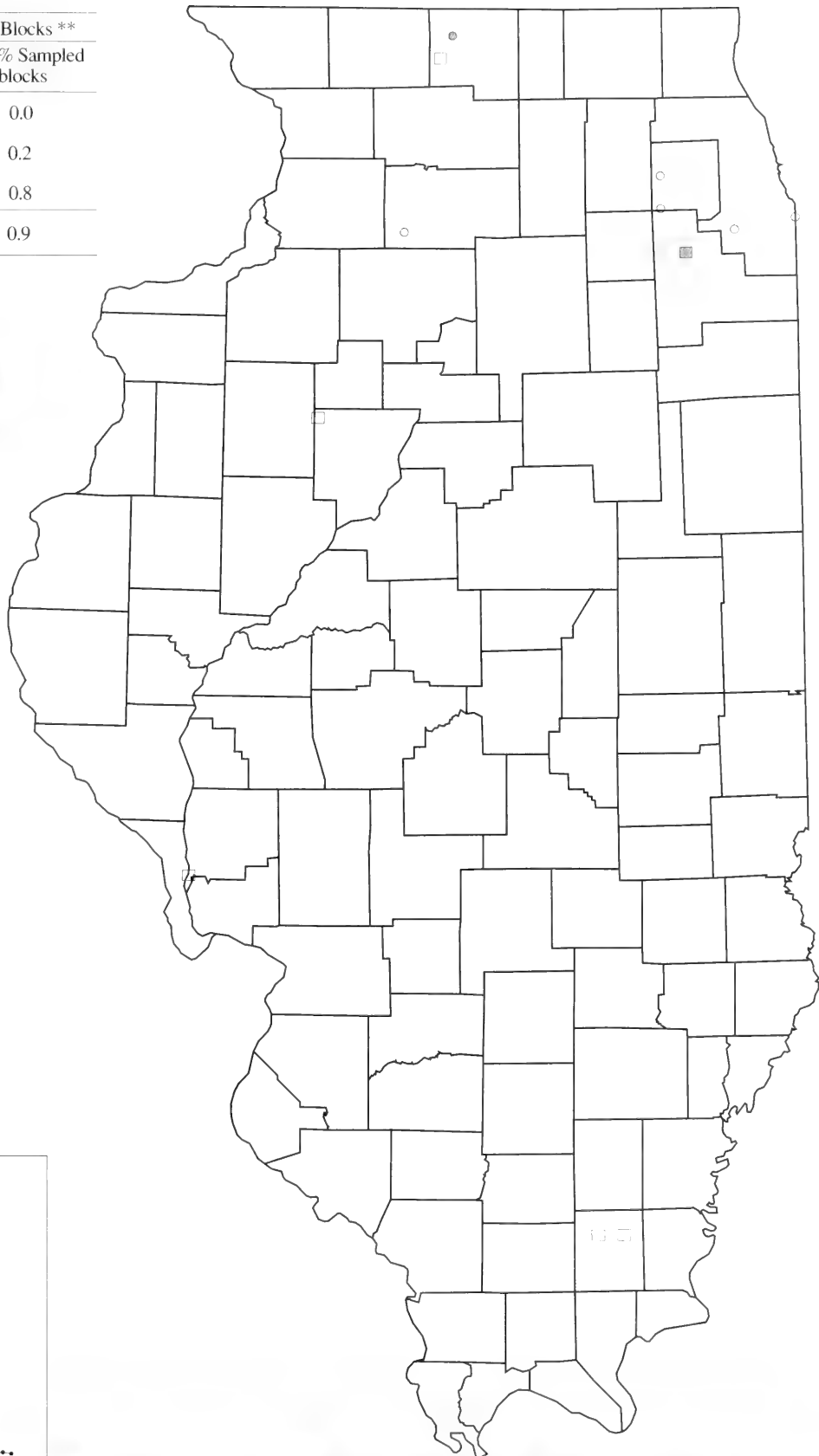


% of 998 sampled priority blocks (gray = no records for this species)

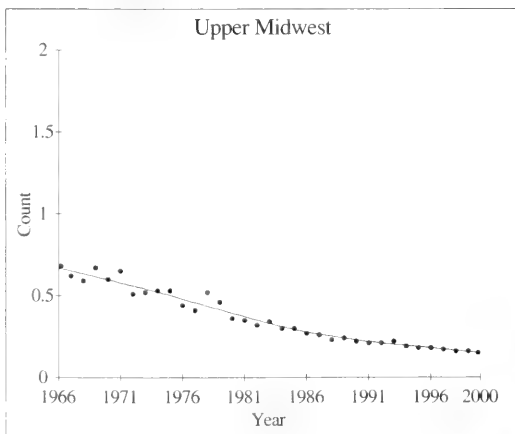


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**American Bittern**



Todd Fink / Daybreak Imagery

## Code: LEBI

**Rangewide Distribution:** eastern half of the U.S. and a disjunct breeding population in Oregon and California, south through Central America and the West Indies.

## ILLINOIS

**Abundance:** uncommon migrant and summer resident.

**Endangered/Threatened Status:** threatened.

**Breeding Habitat:** shallow freshwater lakes and marshes with tall and dense emergent vegetation, especially cattails.

**Nest:** a platform of sticks and emergent vegetation, in dense vegetation over water.

**Eggs:** 4–5, bluish to greenish white, unmarked.

**Incubation:** 19–20 days.

**Fledging:** about 25 days.

The smallest member of the heron family, the Least Bittern is a secretive and solitary stalker associated with marshes having tall, dense emergent vegetation. Few species are more adept at avoiding detection. These birds spend the majority of their time climbing through and around dense vegetation over water as they stalk small fish, insects, amphibians, and reptiles. During the breeding season, males produce a dovelike cooing to advertise their presence (Gibbs et al.

1992a) and a low barking sound, often at night. In some marshes the Least Bittern occurs in loose colonies. It appears to be sensitive to habitat changes and a colony may abandon a wetland and move to areas with more favorable habitat, often on an annual basis (Gibbs et al. 1992a; Graber et al. 1978). In North America the breeding range of the Least Bittern is generally in the eastern half of the U.S. south to Central America. Loss and degradation of shallow water wetlands habitat has been the greatest threat for this species (Gibbs et al. 1992a). Management considerations for the Least Bittern include preservation and protection of relatively large shallow wetlands interspersed with patches of emergent vegetation (Hands et al. 1989; Herkert 1992).

## Illinois History

The Least Bittern was once a common to very common breeding species in freshwater lakes and marshes throughout the state (Kennicott 1855; Nelson 1876; Ridgway 1895). Like the populations of most wetland-dependent species, the Least Bittern population plummeted during the 1900s because of the loss and deterioration of wetland habitats. Now only rarely encountered, the Least Bittern was declared an endangered species in 1989; its status was changed to threatened in 1999.

## Breeding Bird Survey Trends

Because the Least Bittern is rare and secretive, it is not adequately sampled by the BBS. Data were not adequate in Illinois to estimate trends. In the upper Midwest, the trend estimate is –4.9% per year (nonsignificant,  $P = 0.36$ ) for 1966–2000; however, sample size and relative abundance are low.

*Credibility Index: IL = none and UM = 3.*

## Distribution

Atlas data indicate that the Least Bittern has a spotty distribution as a breeding species in Illinois. At present it is most regularly encountered in wetlands in northeastern Illinois, the Illinois River valley, Kidd Lake Marsh (Monroe County), and Mermet Lake Conservation Area (Massac County).

## Frequency

The Least Bittern was reported from 19 (1.9%) priority blocks and 16 nonpriority blocks. Breeding was Confirmed in 4 (0.4%) of the priority blocks. Sites with Probable and Possible records and areas with extensive cattail marshes should be considered potential breeding sites.

## Breeding Evidence

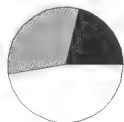
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	4	0.4	21.1	8	0.6
Probable	6	0.6	31.6	9	0.7
Possible	9	0.9	47.4	18	1.4
Totals	19	1.9	100.0	35	2.7

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Least Bittern**



Eric Walters

**Code:** GBHE

**Rangewide Distribution:** southern half of Canada, south through all of the U.S. to the northern coast of South America and the West Indies.

**ILLINOIS**

**Abundance:** common migrant and summer resident, fairly common winter resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** tree-covered islands in lakes and rivers and undisturbed bottomland forests or large woodlots near bodies of water.

**Nest:** a bulky stick platform lined with twigs and leaves, in the tallest (usually deciduous) tree, almost always in a colony.

**Eggs:** 3–5, light bluish green, unmarked.

**Incubation:** 28 days.

**Fledging:** from 56 to 60 days.

The Great Blue Heron, referred to as the blue crane by some, is one of the largest and most widespread wading birds in North America. The breeding range in North America includes the southern half of Canada, most of the U.S., and parts of Mexico. Great Blues are colonial nesters. Colonies, which range in size from a few nests to several hundred, are typically situated high in tall trees of riparian corridors, swamps, or on islands, and are conspicuous enough to be readily detected by aerial surveys. They also occur in forest habitats a considerable distance from water. The sites are selected based on the types and height of nest trees available, with sycamore and cottonwood being favored, and the

availability of dependable and undisturbed feeding sites. They forage by wading for fish, amphibians, reptiles, and invertebrates.

**Illinois History**

The Great Blue Heron has been a common and widespread breeding species in Illinois since the earliest accounts (Ridgway 1895; Cory 1909; Bohlen 1989). Graber et al. (1978) suggested a population decline in the 1960s and early 1970s because, of the 90 colonies once reported in Illinois, only 34 had been active since 1973 and 10 of these were deserted by 1977. Data acquired since 1983, when the annual colonial waterbird survey for Illinois was initiated, indicate that the population has recovered and is at a relatively high level. In 2000 there were approximately 12,000 nesting pairs in 117 colonies (Kleen 2001a). Known locations of Great Blue Heron colonies in 2000 are shown in Appendix K.

**Breeding Bird Survey Trends**

Since the Great Blue Heron is both widespread and common, it is one of the few colonial species with sufficient BBS data to calculate reasonably reliable trend estimates. In Illinois the BBS trend estimate indicates an annual increase in population of 13.5% (significant,  $P < 0.01$ ) from 1966 to 2000. For the two subinterval periods, the state population declined at an annual rate of  $-20.8\%$  (significant,  $P = 0.01$ ) during 1966–1979 but recovered during 1980–2000 at an annual rate of  $11.1\%$  (significant,  $P < 0.01$ ). Perhaps this is a result of a recovery from the effects of DDT in the environment in the 1950s through the 1970s (Blus et al. 1980; Anderson and Hickey 1972). The population in the upper Midwest has increased at an annual rate of  $4.2\%$  (significant,  $P < 0.01$ ) from 1966 to 2000.

*Credibility Index:*  $IL = 2$  and  $UM = 1$ .

**Distribution**

During the atlas project, Great Blue Herons were reported throughout the state, with priority block records in three-fourths of the counties. Although most colonies are generally associated with major rivers, Great Blue Herons are found in every county in the breeding season because they forage over a wide area.

**Frequency**

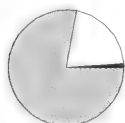
Great Blue Herons were reported from 221 (22.1%) priority blocks and 50 nonpriority blocks. Breeding was Confirmed in 10 (1.0%) of the priority blocks, or less than 5% of the blocks in which they were reported. Since Great Blue Herons forage several miles from their nesting colonies, they were often seen in priority blocks where actual nesting did not occur.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	10	1.0	4.5	26	2.0
Probable	1	0.1	0.5	1	0.1
Possible	210	21.0	95.0	244	19.0
Totals	221	22.1	100.0	271	21.1

\* 998 priority blocks

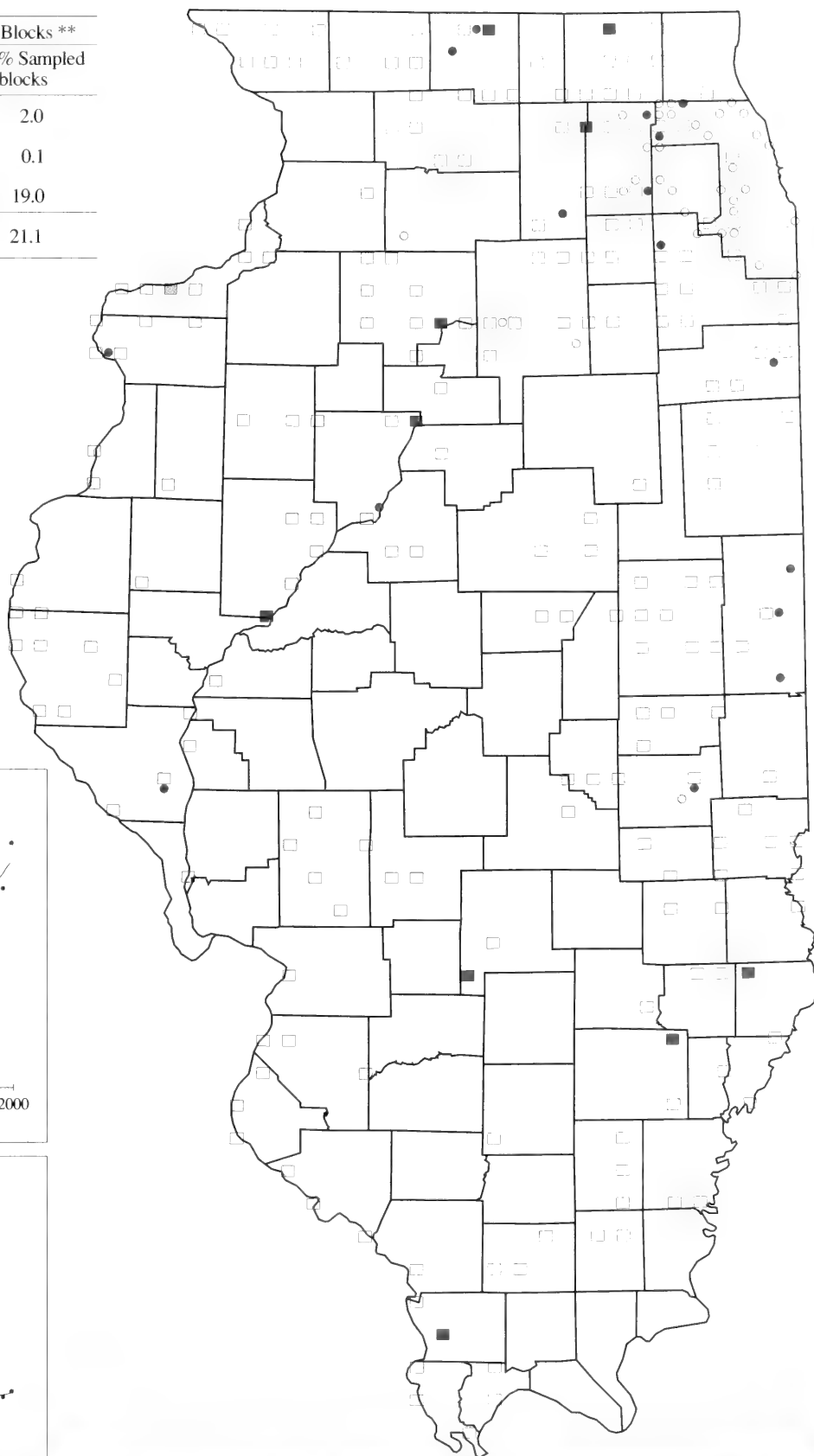
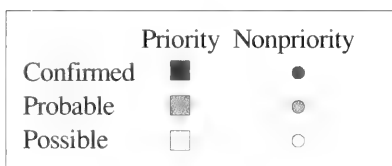
\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

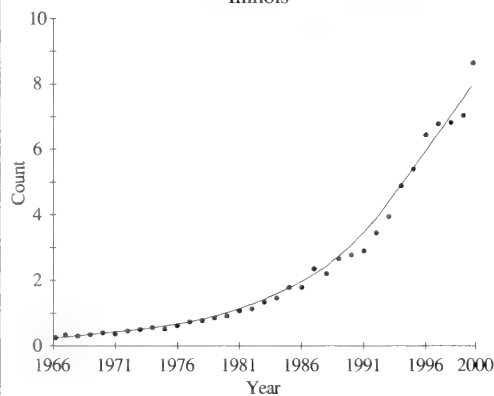


% of priority blocks with records for this species

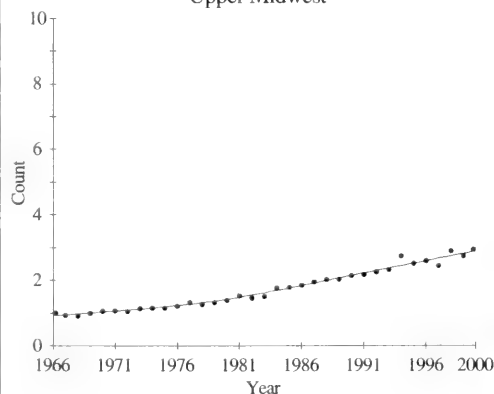


## Breeding Bird Survey Trends

Illinois



Upper Midwest



**Great Blue Heron**





Joe Milosevich

**Code: GREG**

**Rangewide Distribution:** worldwide; scattered populations from the U.S. south to southern Chile.

**ILLINOIS**

**Abundance:** common to fairly common migrant and summer resident along the major rivers, less common and post-breeding wanderer elsewhere.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** floodplain forests and swamps.

**Nest:** a frail platform of sticks and twigs sometimes lined with fine materials. Always in a colony, most often with Great Blue Herons.

**Eggs:** 3, pale blue or greenish blue, unmarked.

**Incubation:** 23–26 days.

**Fledging:** from 42 to 49 days.

The Great Egret is a beautiful all-white heron with a global distribution. In North America it breeds primarily in the Atlantic, Gulf, and Pacific coast states, the central U.S., and along the coasts of Mexico and Central America. The population was decimated in the late 1800s and early 1900s by plume hunters but recovered when protection laws were enacted in the early 1900s. It normally returns to the same nesting site year after year and nests in colonies with other species, especially Great Blue Herons as well as Black-crowned Night-Herons, Snowy Egrets, Little Blue Herons, and Cattle Egrets. Great Egrets usually nest near the tops of tall trees. In its breeding range, colonies are found in floodplain forests and swamps, near lakes, and on islands. Great Egrets feed in marshes, streams, rivers, lakes, ponds,

and ditches, especially on fish but also invertebrates, amphibians, reptiles, and birds.

**Illinois History**

The Great Egret was considered abundant in the 1800s (Barnes 1926) with nesting reported as far north as Kankakee. Plume hunters decimated the population in the late 1800s and early 1900s. Great Egrets reappeared in Illinois in the late 1920s and became re-established as a breeding species by the late 1930s. The population expanded through the 1960s. A major population decline occurred during the mid-1970s (Graber et al. 1978). The species may now be nesting in record numbers compared to the populations in the 1800s (Kleen 2001a). In 2000, there were approximately 2,275 nesting pairs in 21 active colonies in Illinois (Kleen 2001a). Locations of known colonies of Great Egrets in 2000 are shown in Appendix K. The Great Egret was listed as an endangered species in 1977 but was delisted in 1999 because of its recent recovery.

**Breeding Bird Survey Trends**

For the period of 1966–2000 the trend estimates for the Great Egret population are 13.9% per year (significant,  $P = 0.03$ ) in Illinois and 12.5% per year (significant,  $P < 0.01$ ) in the upper Midwest. For the state and the region, negative trend estimates for 1966–1979 were followed by positive ones for 1980–2000, perhaps reflecting a recovery from the effects of DDT in the environment. BBS data is generally not adequate for determining reliable population trends for colonial species.

*Credibility Index: IL = 3 and UM = 2.*

**Distribution**

Great Egrets were reported from several sites along the Illinois and Mississippi rivers and in northeastern Illinois during the atlas project. Nesting colonies were usually within a mile of the observation locations. Although not reported by the atlas project, large colonies existed in southern Illinois as well. Two of the larger colonies in northeastern Illinois occur on artificial islands in man-made lakes.

**Frequency**

Great Egrets were reported from 38 (3.8%) priority blocks and 23 nonpriority blocks. Breeding was Confirmed in 2 (0.2%) of the priority blocks. Great Egrets, like other herons, often feed several miles from their nesting colonies and were often seen in priority blocks where actual nesting did not occur.

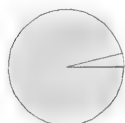


## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	2	0.2	5.3	6	0.5
Probable	0	0.0	0.0	0	0.0
Possible	36	3.6	94.7	55	4.3
Totals	38	3.8	100.0	61	4.7

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

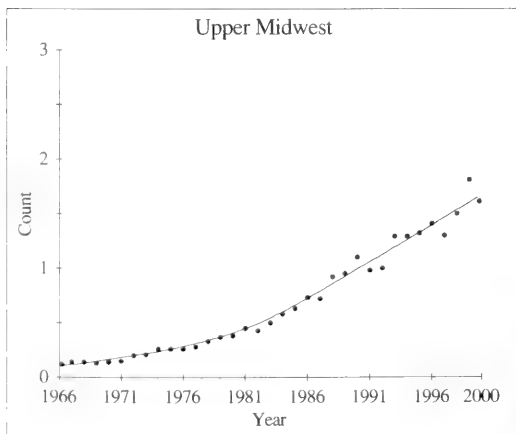
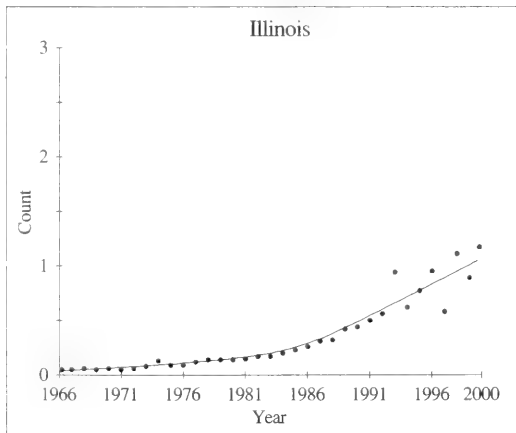


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Great Egret**



Joe Milosevich

**Code:** SNEG

**Rangewide Distribution:** scattered populations in much of the U.S. south through central South America.

**ILLINOIS**

**Abundance:** a rare migrant and very local summer resident (in the Madison/St. Clair County area, where it is becoming more common); post-breeding wanderer.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** lowland thickets in company with other colonial herons.

**Nest:** a frail, flimsy platform of small sticks lined with finer twigs or rushes.

**Eggs:** 3–5, light bluish green, unmarked.

**Incubation:** 20–24 days.

**Fledging:** about 30 days.

The Snowy Egret is known for its beautiful white breeding plumage. In North America it breeds along the Atlantic and Pacific coasts of the U.S., Mexico, and Central America, and at scattered wetlands inland. It is a colonial species that generally nests in multispecies colonies, and is found in Illinois as an associate member of a large colony that includes Little Blue Herons, Great Egrets, Cattle Egrets, and Black-crowned Night-Herons. Snowy Egrets in the Midwest breed in bottomland forests and swamps. They forage for fish, invertebrates, amphibians, and reptiles in marshes, streams, rivers, lakes, and ponds. Plume hunters decimated

the population until laws were established in the early 1900s to protect this species. Snowy Egret populations recovered but widespread population declines in the late 1900s indicate that this species is still being impacted by environmental changes, such as loss and degradation of wetland habitat (Parsons and Master 2000).

**Illinois History**

Once very scarce, Snowy Egret numbers as a migrant and breeding species in Illinois, though still small, are currently increasing. The breeding population of Snowy Egrets in Illinois was probably never very large since the state is at the northern edge of its breeding range. Like other herons and egrets, this species was greatly reduced in numbers during the plume-trade era of the late 1800s and early 1900s and was soon extirpated from the state. Evidence of its return was first detected in the mid-1930s and it was reestablished as a nesting species at the end of the 1960s. Since the Snowy Egret's nesting population is tenuous (low numbers of nesting pairs and confined primarily to a single nesting site), it is listed as an endangered species in Illinois. The number of nesting pairs had increased to nearly 50 in 2001 (Kleen 2002b); however, the species is still limited to a single nesting site.

**Breeding Bird Survey Trends**

Illinois is at the northern edge of the Snowy Egret's breeding range. It occurs in such low numbers that the data are not adequate to reliably estimate population trends for the state or the upper Midwest.

*Credibility Index: IL = none and UM = none.*

**Distribution**

In recent years, the only known consistent nesting site for the Snowy Egret has been in or near the American Bottoms in St. Clair and Madison counties. However, sporadic nesting has probably occurred at least twice in the last 15 years in transient colonies along with other herons in western Alexander County. The range of the Snowy Egret has expanded in Illinois since the atlas project ended, and it is possible that it may become a regular nesting species at the Lake Calumet colony or other multispecies colonies.

**Frequency**

The only priority block with evidence of breeding for the Snowy Egret was in the Lake Calumet area in Cook County, where it was classified as a Probable breeder. It was also reported in one nonpriority block.

## Breeding Evidence

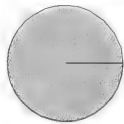
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	0	0.0	0.0	0	0.0
Probable	1	0.1	100.0	1	0.1
Possible	0	0.0	0.0	1	0.1
Totals	1	0.1	100.0	2	0.2

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

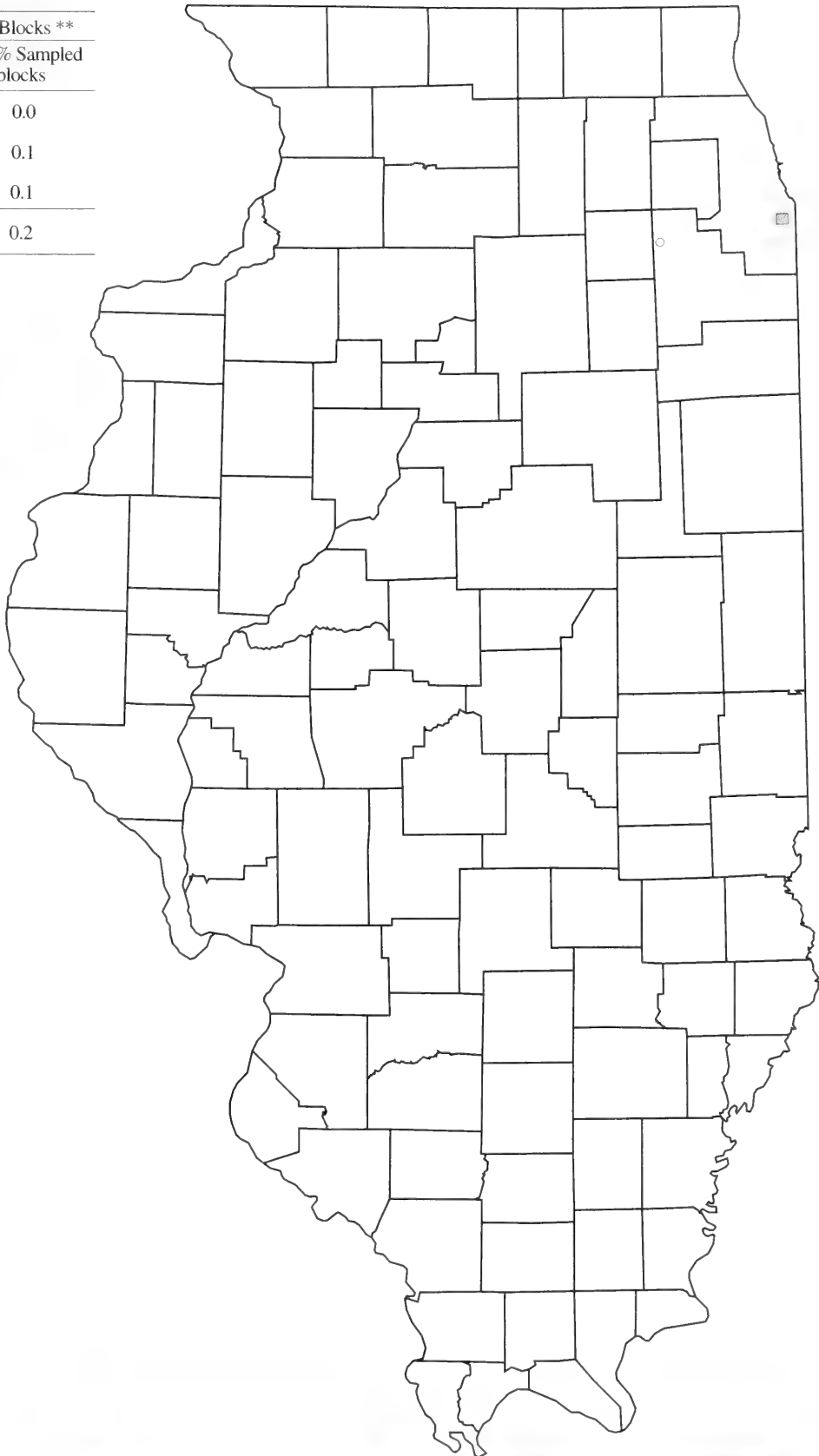


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Snowy Egret**

## Little Blue Heron

*Egretta caerulea*



Richard Day / Daybreak Imagery

**Code: LBHE**

**Rangewide Distribution:** eastern U.S. to central South America.

**ILLINOIS**

**Abundance:** uncommon migrant and local breeder (mostly in south); post-breeding wanderer.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** lowland thickets in company with other colonial species.

**Nest:** a small, flimsy platform of small sticks and twigs sometimes lined with finer materials.

**Eggs:** 3–5, light bluish green, unmarked.

**Incubation:** 20–23 days.

**Fledging:** from 42 to 49 days.

The Little Blue Heron is widely distributed in the Americas. In North America it breeds primarily in the southeast U.S., along the coasts of Mexico, and on the Caribbean islands. It is a colonial nesting species and shares colony sites with other herons and egrets. Little Blue Herons forage in marshes, streams, rivers, lakes, ponds, and ditches, feeding on small fish, amphibians, and invertebrates.

**Illinois History**

The Little Blue Heron may have only recently initiated nesting in the state, since Illinois is at the northern edge of its

breeding range. Although there are many early records of post-breeding wanderers [i.e., “not uncommon in late summer in southern Illinois” (Cory 1909)], there is a paucity of other historical information. Presently, loose migratory flocks of Little Blue Herons can be seen in southern Illinois in early May as they head north towards their upriver nesting site. Since the nesting population is limited primarily to a single location, albeit the site has increased to 750+ nesting pairs (Kleen 2002b), the Little Blue Heron is listed as an endangered species in Illinois.

**Breeding Bird Survey Trends**

This wetland species has a localized breeding distribution in the state and is not adequately sampled by the BBS. The trend estimates for 1966–2000 are 0.4% per year (nonsignificant,  $P = 0.96$ ) for Illinois and -1.9% per year (nonsignificant,  $P = 0.71$ ) for the upper Midwest. Sample sizes are small for both the state and the region.

*Credibility Index: IL = 3 and UM = 3.*

**Distribution**

In Illinois Little Blue Herons nest in colonies with Great Egrets, Cattle Egrets, Snowy Egrets, and Black-crowned Night-Herons. In recent years, the only consistent nesting site for Little Blue Herons has been in or near the American Bottoms in St. Clair and Madison counties. The colony consists of at least five heron species and has changed locations at least five times since the late 1960s. It has been at its current site since the mid-1980s. Sporadic nesting of birds from a transient Missouri colony has occurred at least twice in the past 15 years in flooded woodlots in western Alexander County. From 1999 to 2001, two nesting pairs have also been present in southeastern Cook County (Kleen 2000a, 2001c, 2002b). It is possible that since the Little Blue Heron's range is expanding, it may become a regular nesting species at other multispecies colonies in Illinois.

**Frequency**

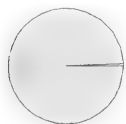
Little Blue Herons were reported from seven priority blocks and no nonpriority blocks. All records were observations of the species in suitable nesting habitat (i.e., Possible breeding). During the atlas project, the Little Blue Heron nested in only one known colony in the state, but the site was not in a sampled atlas block.

## Breeding Evidence

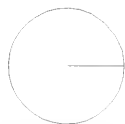
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	0	0.0	0.0	0	0.0
Probable	0	0.0	0.0	0	0.0
Possible	7	0.7	100.0	7	0.5
Totals	7	0.7	100.0	7	0.5

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

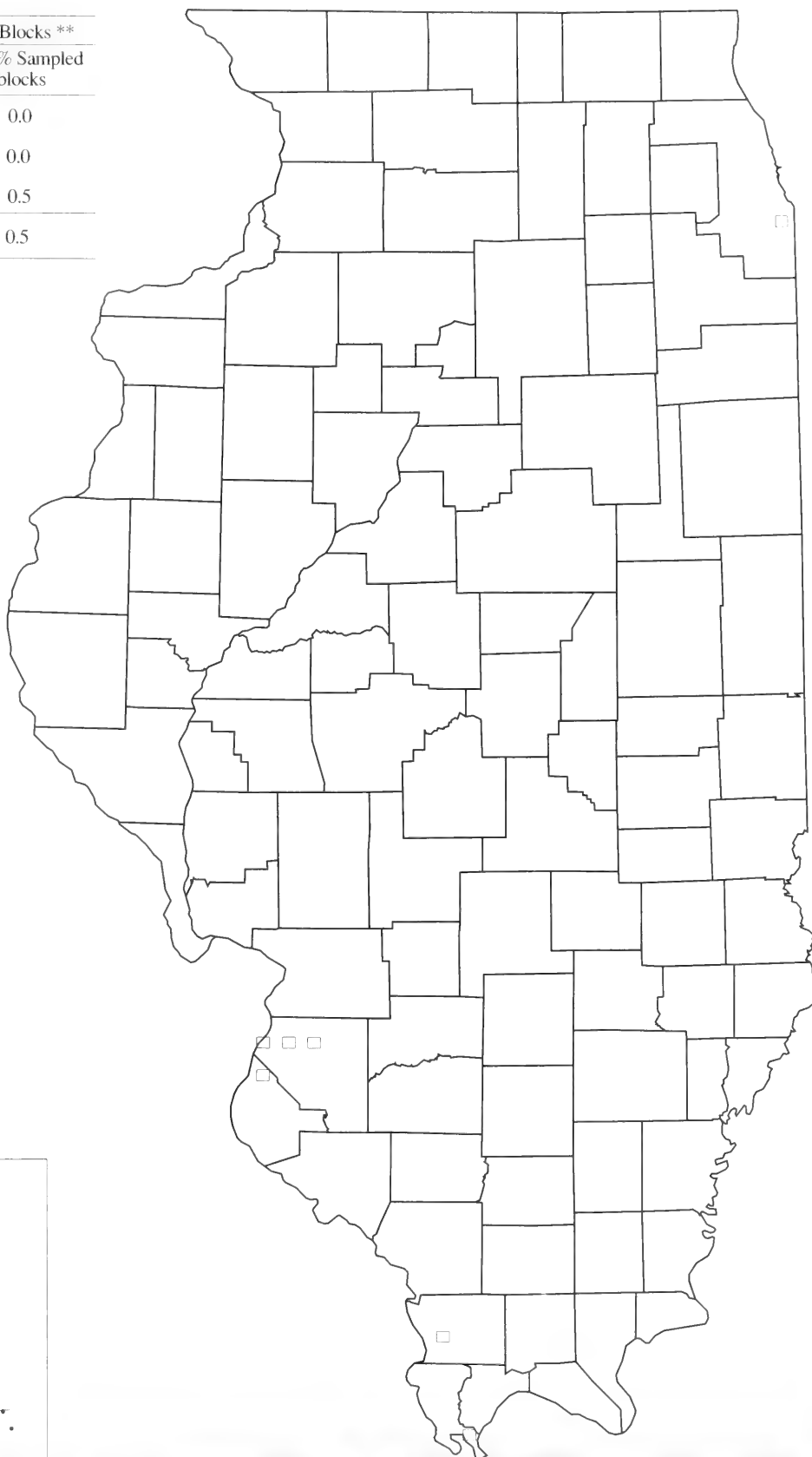


% of 998 sampled priority blocks (gray = no records for this species)

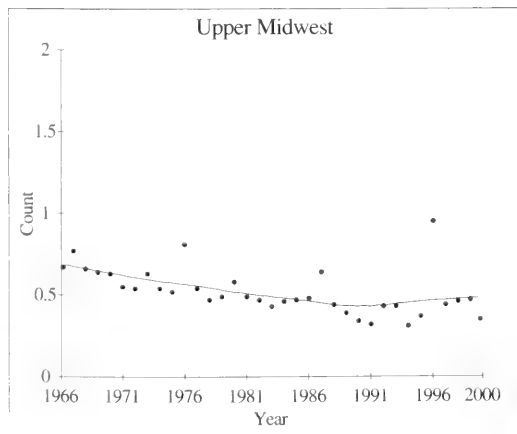


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Little Blue Heron**



Joe Milosevich

**Code: CAEG**

**Rangewide Distribution:** worldwide; southern Canada through much of the U.S. to southern South America.

**ILLINOIS**

**Abundance:** common to fairly common migrant and local breeder in isolated or multi-species colonies

**Endangered/Threatened Status:** none

**Breeding Habitat:** undisturbed woodlots near pastures, fields, wetlands, and airfields; often associated with livestock

**Nest:** small, fragile platform of sticks and twigs, also reeds when easily available.

**Eggs:** 3–5, light bluish white or bluish green, unmarked.

**Incubation:** 22–26 days.

**Fledging:** about 30 days.

The range of the Cattle Egret has expanded from its origins in Africa to nearly worldwide. In North America, nesting was first reported in the 1950s and it is now widespread, and the population is still expanding; its primary breeding range includes the eastern and central U.S., Mexico, and Central America. Unlike other heron and egret species, it is associated with drier, more open habitat, especially pastures. Cattle Egrets feed in flocks, mainly on insects stirred up by grazing cattle or plows and mowers. They nest in multi-species colonies. In North America colonies are found in woodlands, swamps, wooded islands, and coastal islands (Telfair 1994). Nests in Illinois are typically found in small woodlots or willow thickets and range from about 4 to 20 feet above ground.

## Illinois History

The first Cattle Egret in Illinois was reported in southeastern Cook County in August of 1952. The species was next reported in Madison County in 1962 at what turned out to be the date and site for the first nesting record for the state. Since then, the number of Cattle Egrets nesting in that colony has increased dramatically with about 100 nesting pairs in 1983 and more than 1,000 in 2001 (Kleen 2002b). In Illinois this species continues to increase in numbers, especially in the spring when it may appear anywhere in the state.

## Breeding Bird Survey Trends

The trend estimate for 1966–2000 in Illinois is 8.5% per year (nonsignificant,  $P = 0.14$ ). On a regional scale, the upper Midwest trend estimate for 1966–2000 is 7.9% per year (nonsignificant,  $P = 0.05$ ). The BBS does not adequately sample many colonial species and sample size is low for this localized breeding species in the state and region.

*Credibility Index: IL = 3 and UM = 3.*

## Distribution

Cattle Egrets were reported in atlas blocks near the Illinois River, northeastern Illinois, and in the St. Clair/Madison County area—the feeding area of the only major colony in the state. Since the atlas project, four known attempts to establish new colonies have failed. In 1993 new sites in Union and Carroll counties, each containing several hundred nests, were destroyed by the Mississippi River flood. In 1996 new sites in Lawrence and Wabash counties containing 50 and 100 nests, respectively, successfully fledged young but were abandoned in subsequent years. Cattle Egrets were also part of the multi-species colony that appeared twice in western Alexander County in the 1980s and 1990s. Even though Cattle Egrets have attempted nesting, with and without success, at various locations in the state, it appears that their expansion as a nesting species has been slow and the best chance of success is when they are part of large, multi-species colonies.

## Frequency

Cattle Egrets were reported from 12 (1.2%) priority blocks and 4 nonpriority blocks. Breeding was Confirmed in 1 priority block (Fulton County) and 2 nonpriority blocks (Peoria and Will counties).

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	8.3	3	0.2
Probable	0	0.0	0.0	0	0.0
Possible	11	1.1	91.7	13	1.0
Totals	12	1.2	100.0	16	1.2

\* 998 priority blocks

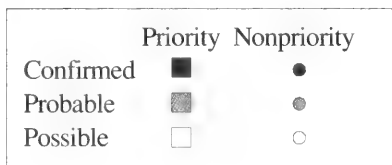
\*\* 1,286 total blocks (priority and nonpriority)



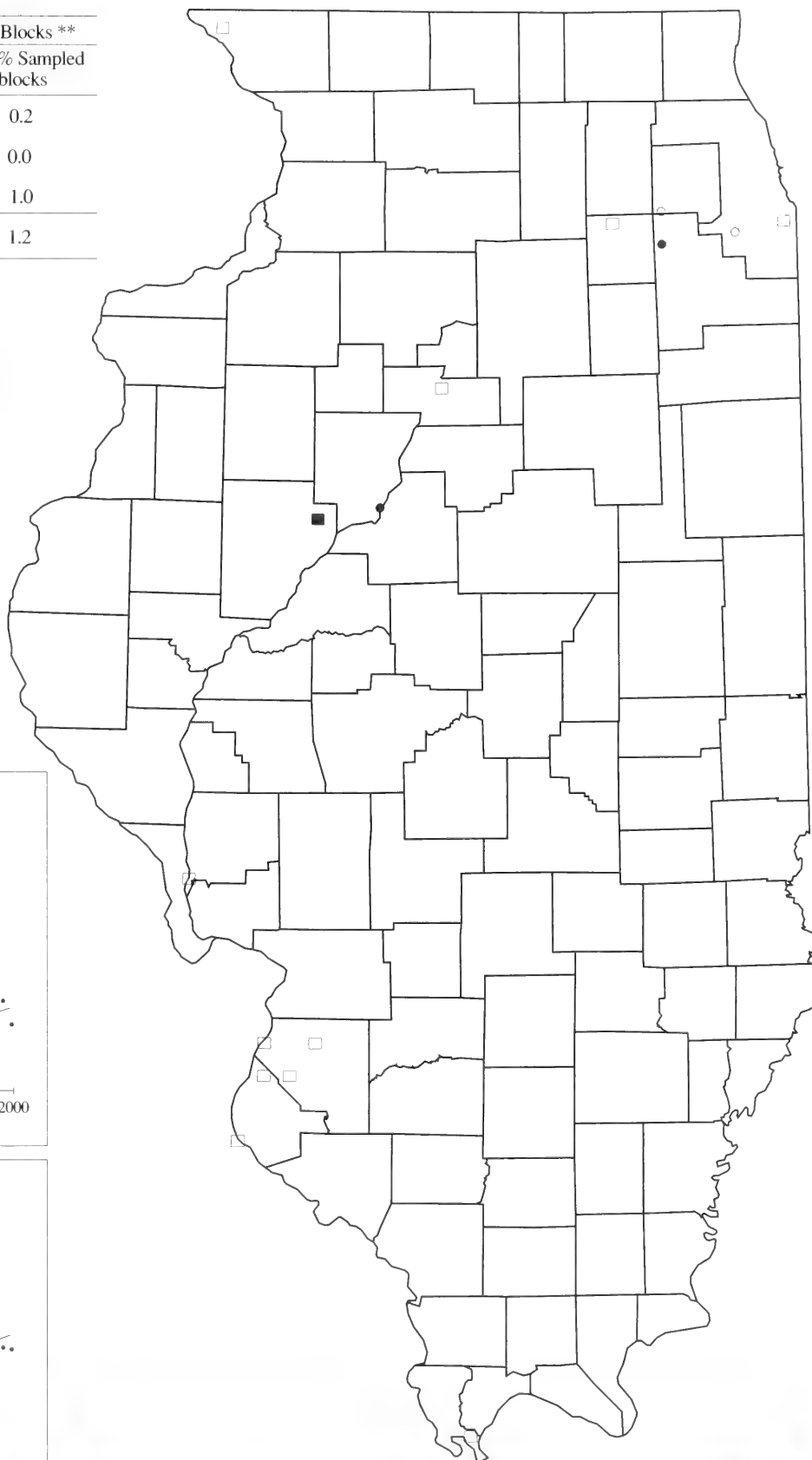
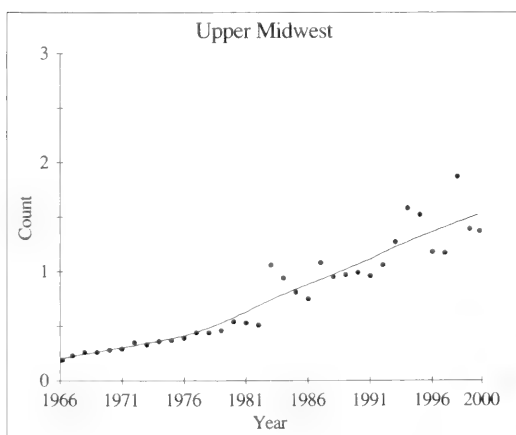
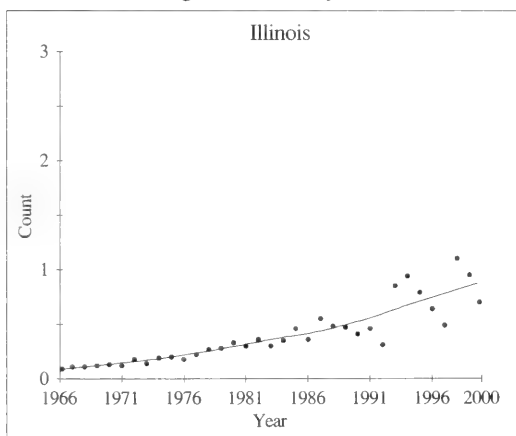
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Cattle Egret**



Joe Milosevich

**Code: GRHE**

**Rangewide Distribution:** eastern half of the U.S., Pacific states and southwestern U.S., south to northern South America and the Caribbean Islands.

**ILLINOIS**

**Abundance:** common migrant and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** wooded margins of ponds, swamps, and other water.

**Nest:** a frail, flimsy platform of intertwined sticks and twigs, in a small tree in or close to water.

**Eggs:** 2–5, light green or bluish green, unmarked.

**Incubation:** 21–25 days.

**Fledging:** about 34–35 days.

The small, stocky Green Heron is a common species in wetland thickets in much of North America where its breeding range includes the eastern half of the U.S., the west coast states, Mexico, and Central America. It is found near any body of water, but is especially associated with small, willow-lined ponds and second-growth trees near shallow water. It usually nests in isolation, though on occasion it does nest in colonies, usually with 20 or fewer nests, with other Green Herons or with other species. For nesting, Green Herons prefer dense or brushy thickets in or close to water. Nests are difficult to detect and the adults are secretive when

on or in the vicinity of their nests, thereby assuring a better chance for survival of their young. Green Herons feed day or night on fish, amphibians, and invertebrates in shallow waters of streams, ditches, lakes, ponds, and wetlands. Historical numbers and trends are not well known, although the extensive loss of wetland habitat has undoubtedly affected the population.

**Illinois History**

Green Herons were probably much more common a century ago, prior to the large-scale loss of wetlands, than they are now. At the end of the nineteenth century, a population decline may have occurred (Barnes 1890). Graber et al. (1978) estimated another 80% decline during the 49-year span between surveys conducted during 1907–1909 and 1956–1958.

**Breeding Bird Survey Trends**

Because Green Herons are secretive, solitary nesters and hard to detect, the BBS does not adequately sample this species. The available data indicate the trend for 1966–2000 for Illinois to be 1.5% per year (nonsignificant,  $P = 0.22$ ). In the upper Midwest the trend between 1966 and 2000 is estimated at  $-0.5\%$  per year (nonsignificant,  $P = 0.36$ ). *Credibility Index:* IL = 2 and UM = 2.

**Distribution**

Atlas data indicate that the Green Heron was widespread during the project. Breeding evidence was reported in priority blocks in 99 counties and it probably nests in all counties.

**Frequency**

The Green Heron was reported from 510 (51.1%) priority blocks and 127 nonpriority blocks. Breeding was Confirmed in 77 (7.7%) of the priority blocks, mostly by observation of fledged young. Because Green Herons can be readily detected by visual observation as they fly overhead or by their unique squawk, they were reported from a fairly high number of blocks, although the confirmation rate (Confirmed in 15% of the 510 priority blocks in which they were reported) was relatively low. It is likely that Green Herons nested in the majority of blocks in which they were reported.

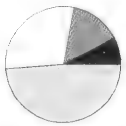


## Breeding Evidence

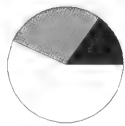
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	77	7.7	15.1	114	8.9
Probable	143	14.3	28.0	185	14.4
Possible	290	29.1	56.9	338	26.3
Totals	510	51.1	100.0	637	49.5

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

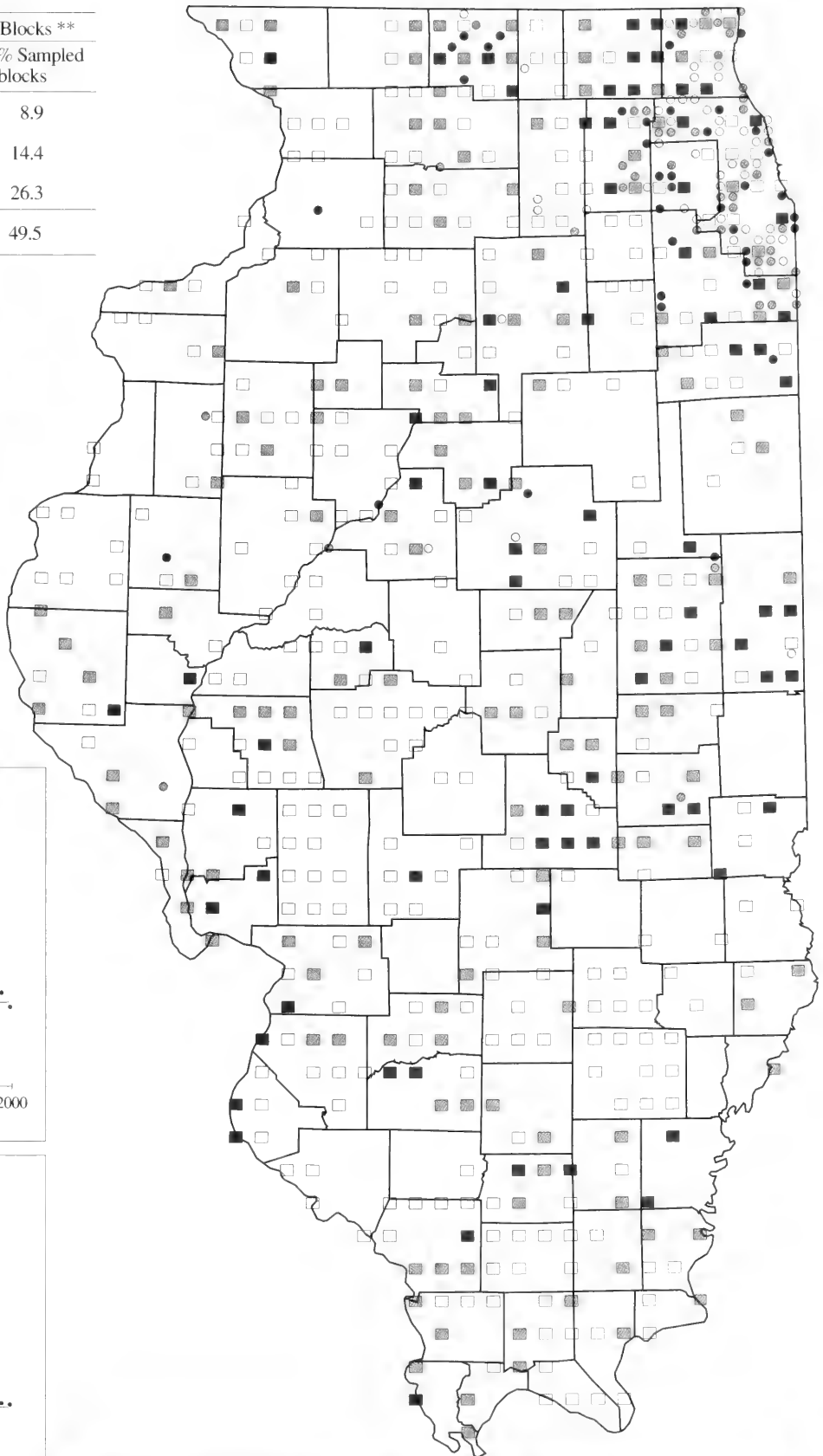


% of 998 sampled priority blocks (gray = no records for this species)

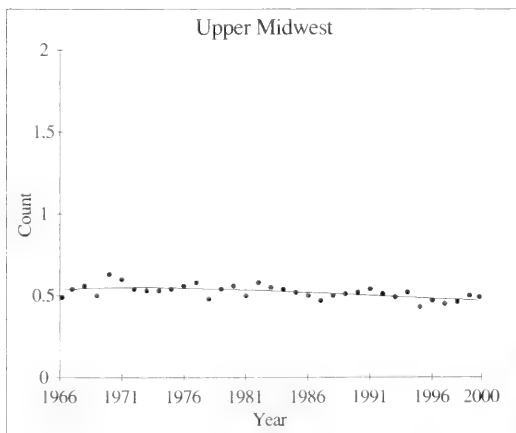
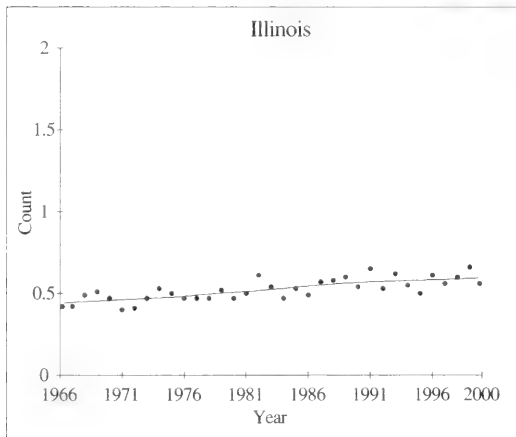


% of priority blocks with records for this species

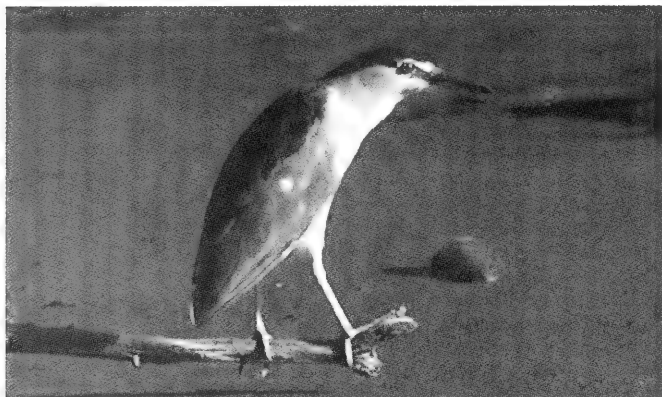
	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Green Heron**



Eric Walters

**Code: BCNH**

**Rangewide Distribution:** Eurasia, Africa, North America from the northern states south throughout most of the U.S., south through central South America.

**ILLINOIS**

**Abundance:** fairly common migrant and uncommon (very local) summer resident.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** highly variable; can be trees (no particular species) over water or some distance from water, or in marshy vegetation.

**Nest:** in trees, a fragile platform of interwoven sticks and twigs; in marshes, twigs and stalks of marsh grasses.

**Eggs:** 3–5, light bluish to greenish blue, unmarked.

**Incubation:** 24–26 days.

**Fledging:** from 42 to 49 days.

The Black-crowned Night-Heron is found nearly worldwide. This species is widespread and generally common in its range in North America, which is generally most of the U.S. (except the Appalachian and northern Rocky mountain regions), south-central Canada, and the coasts of Mexico. It inhabits wetlands and open water, such as ponds and lakes, even near urban areas. It is dependent on isolated and protected locations in or near a high-quality and dependable food source. Black-crowned Night-Herons are mostly active from dusk to dawn, foraging in shallow water for a variety of foods (insects and other invertebrates, amphibians, and fish). They nest in colonies that may or may not include other species of herons and egrets; both types occur in Illinois. They nest in dense vegetation near or over water. Nests are

usually screened by living vegetation (Burger 1978) and, unlike those of the larger herons, cannot be detected from the air. It is very difficult to determine and compare the annual size and success of the colonies without disturbing them.

**Illinois History**

During the nineteenth century, Black-crowned Night-Herons were a common summer resident in wetlands throughout the state (Nelson 1876; Cory 1909). A serious population decline was first reported near the turn of the century (Widmann 1907) and the species experienced even further declines during the first half of the twentieth century (Graber et al. 1978). The declines were attributed to the ongoing destruction and degradation of breeding and foraging sites, increasing human disturbance, and the use of persistent chemicals (e.g., DDT). Since the breeding population was and continues to be extremely vulnerable, the Black-crowned Night-Heron is listed as an endangered species in Illinois. In 2001, about 840 nesting pairs nested in 6 colonies (Kleen 2002b). Known locations of Black-crowned Night-Heron colonies in 2000 are shown in Appendix K.

**Breeding Bird Survey Trends**

Sample size and relative abundance are low for this secretive and very localized species. The trend estimates are 12.3% per year (nonsignificant,  $P = 0.20$ ) for Illinois and 2.3% per year (nonsignificant,  $P = 0.25$ ) for the upper Midwest for 1966–2000.

*Credibility Index:* IL = 3 and UM = 2.

**Distribution**

Black-crowned Night-Herons were found in northeastern Illinois, along the Illinois and Mississippi rivers and at East St. Louis during the atlas project. Based on data from 2001, the most notable colonies occur in northern St. Clair County (about 450 pair), Will County (Lake Renwick, about 39 pair), Cook County (Lake Calumet, about 300 pair), and Lake County (Johns Manville site, 46 pair) (Kleen 2002b). Until recently, Black-crowned Night-Herons occurred in decent numbers at Baker's Lake (Cook County) and at two Illinois River sites south of Peoria.

**Frequency**

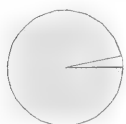
The Black-crowned Night-Heron was reported from 33 (3.3%) priority blocks and 38 nonpriority blocks. It was Confirmed as breeding in 3 (0.3%) of the priority blocks, and regularly observed in blocks adjacent to the breeding colonies.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	3	0.3	9.1	11	0.9
Probable	0	0.0	0.0	0	0.0
Possible	30	3.0	90.9	60	4.7
Totals	33	3.3	100.0	71	5.5

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

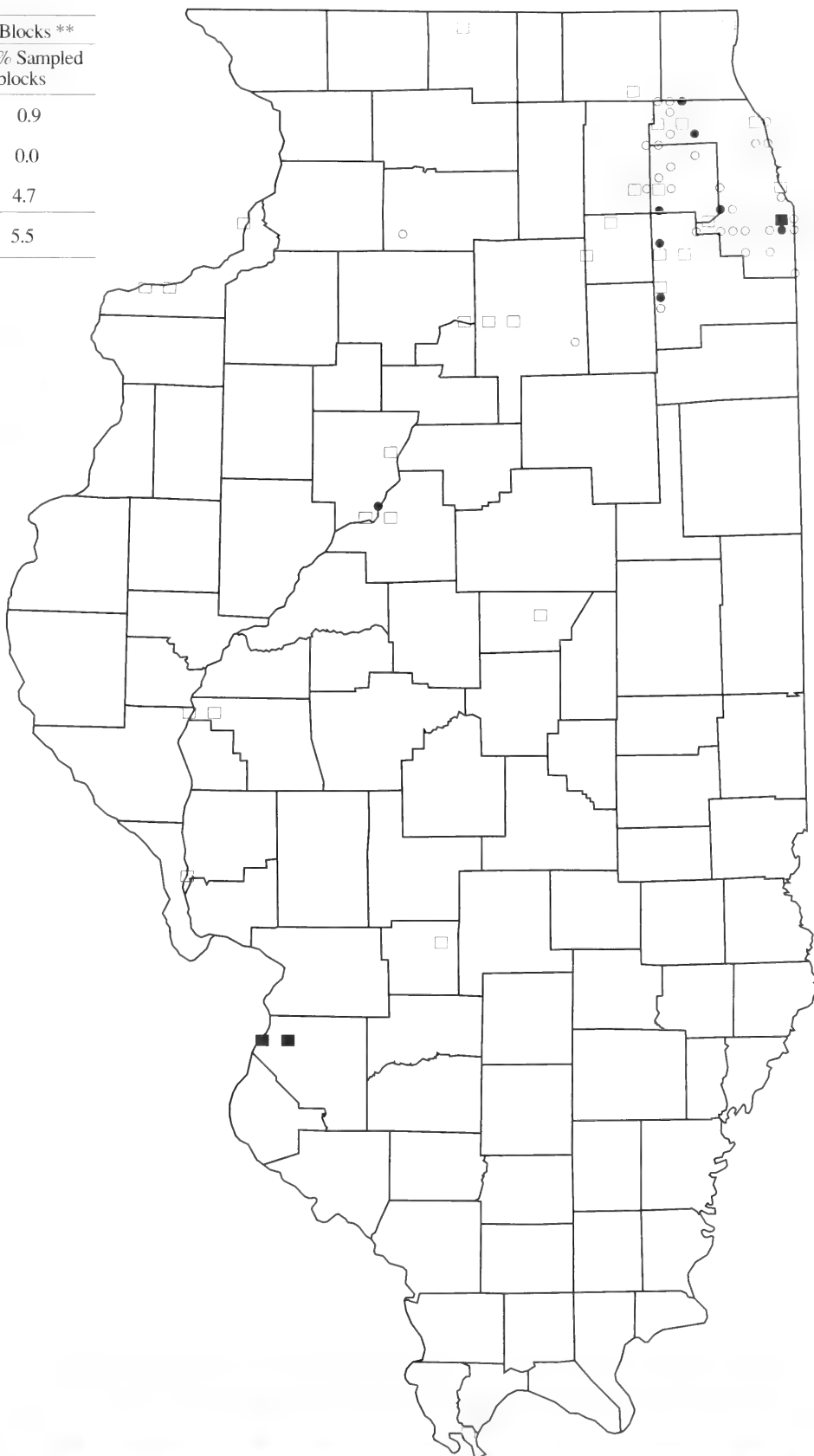


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Black-crowned Night-Heron**



Eric Walters

**Code:** YCNH

**Rangewide Distribution:** eastern U.S., south along coasts of Mexico and northern South America, and the Caribbean Islands.

**ILLINOIS**

**Abundance:** uncommon migrant and rare, localized summer resident, decreasing northward.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** marshes and swamps.

**Nest:** substantial platform of sticks and twigs sometimes lined with rootlets, in trees.

**Eggs:** 4–5, light bluish green, unmarked.

**Incubation:** 21–25 days.

**Fledging:** not specifically known.

The Yellow-crowned Night-Heron is found in forested wetlands and swamps, especially in coastal areas. It breeds primarily in the southeast, south-central, and Atlantic coastal areas of the U.S., and along the coasts of Mexico and Central America. Although it can be observed in suitable habitat during daylight hours, it is more likely to be encountered from dusk to dawn. This species is more secretive and less gregarious than Black-crowned Night-Herons. The Yellow-crowned and Black-crowned Night-Herons rarely feed together because they have distinctly different diets: the Yellow-crowned feeds primarily on crayfish and frogs while the Black-crowned feeds mainly on fish.

**Illinois History**

In the late 1800s and early 1900s the Yellow-crowned Night-Heron was considered a summer resident in suitable localities in the southern third of the state (Ridgway 1895); however, it is not certain whether actual breeding took place (Cory 1909). It is still a scarce nesting species. Nesting birds are known to associate with colonies of other heron species; however, in Illinois they tend to nest as isolated pairs or in small colonies with other Yellow-crowned Night-Herons. Since the population is relatively small and dependent on threatened habitats for nesting and foraging, the Yellow-crowned Night-Heron is currently listed as an endangered species in Illinois.

**Breeding Bird Survey Trends**

Because this wetland species is hard to detect and sample sizes and relative abundances are low for the state and the region, BBS data are not adequate for reliably estimating trends. Population trends for 1966–2000 for both Illinois and the upper Midwest are estimated at –3.7% per year (nonsignificant,  $P = 0.32$  for both).

*Credibility Index:* IL = 3 and UM = 3.

**Distribution**

In Illinois Yellow-crowned Night-Herons are most common in the cypress and tupelo swamps, old oxbows of the Mississippi and Ohio rivers, and backwaters of the Cache and Big Muddy rivers. During the atlas project, Yellow-crowned Night-Herons were reported at isolated sites in the northeast, along the Illinois and Mississippi rivers, and in the southern swamps. This species is known to occur in more locations than reported in the atlas project, especially in southern Illinois. Yellow-crowned Night-Herons also occur irregularly up the Mississippi and Illinois River systems and regularly as far north as Lake County. A few pairs nest in and around Lake Calumet in Cook County every year.

**Frequency**

Yellow-crowned Night-Herons were reported from 18 (1.8%) priority blocks and 10 nonpriority blocks. It was Confirmed as breeding in 5 (0.5%) of the priority blocks. Because of the difficulty in finding nests, it is possible that nesting occurred in a number of other blocks where the species was reported, as well as in suitable habitats where it was not recorded.

## Breeding Evidence

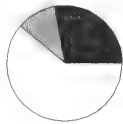
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	5	0.5	27.8	7	0.5
Probable	2	0.2	11.1	2	0.2
Possible	11	1.1	61.1	19	1.5
Totals	18	1.8	100.0	28	2.2

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

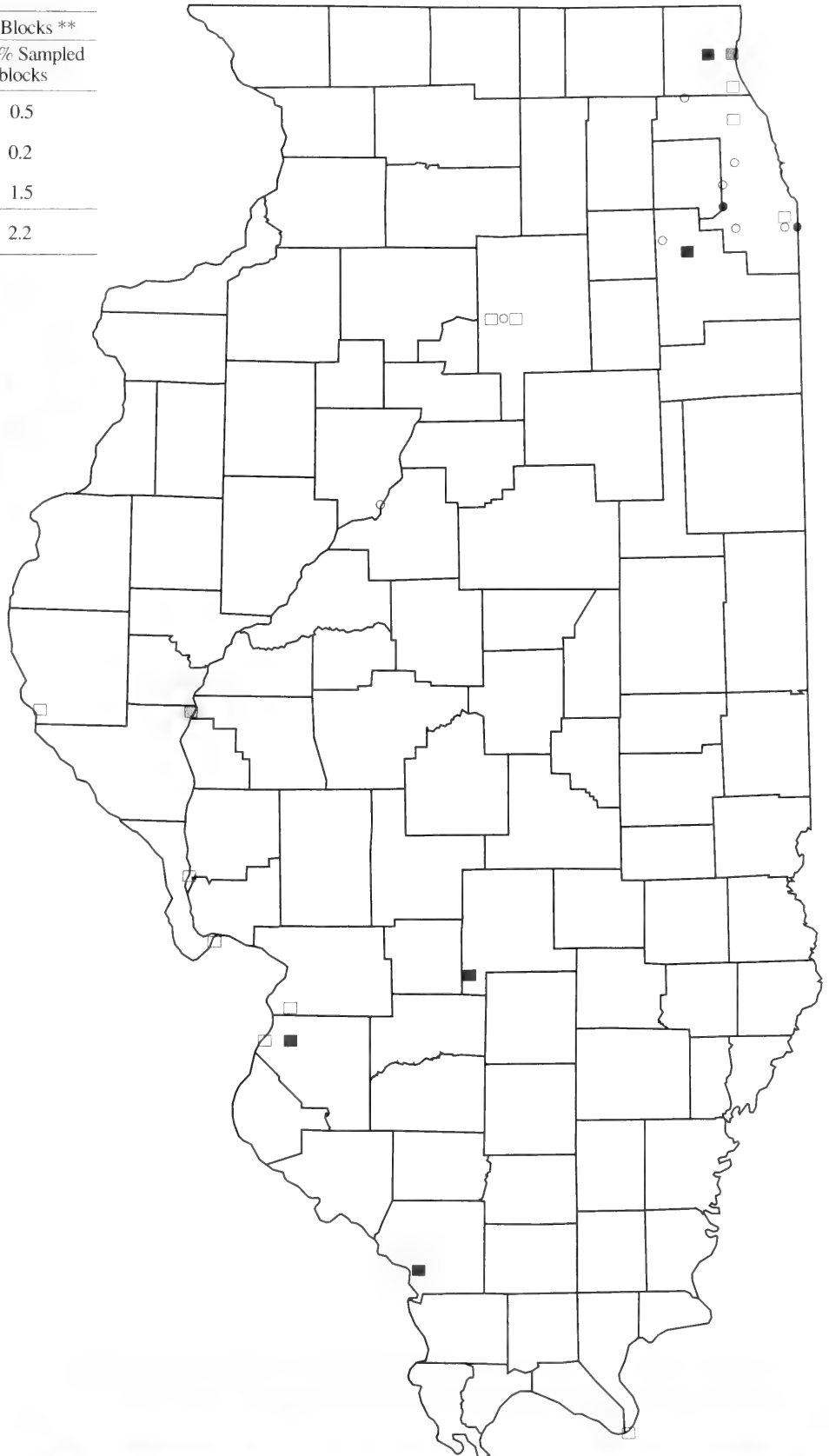


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Yellow-crowned Night-Heron**



Todd Fink / Daybreak Imagery

**Code:** BLVU

**Rangewide Distribution:** southeastern U.S. (south of a line from New York to western Texas) to southern South America.

**ILLINOIS**

**Abundance:** uncommon permanent resident in the southern three tiers of counties.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** agricultural areas, other open and semi-open areas and swamps; most often found in association with hills and bluffs.

**Nest:** on the bare ground in sheltered crevices and caves along cliff lines, hollow logs in forests, or the floor of overgrown, abandoned buildings.

**Eggs:** 2, grayish green to bluish white, often marked with brown or lavender.

**Incubation:** 37–48 days.

**Fledging:** from 80 to 94 days.

Black Vultures are a familiar sight in the southern and eastern U.S. and their range has generally been expanding since the 1940s. Their breeding range currently includes the southeastern U.S. to southern South America. Of the two vulture species found in Illinois, Black Vultures are more gregarious, tend to feed earlier in the day and on larger carrion closer to roost sites, and remain longer while feeding than Turkey Vultures (Coleman and Fraser 1987). The two species coexist at both their summer and winter roosting sites, which include forests, high-tension towers, and roofs of abandoned buildings. Although most often seen individually or in small groups, groups of up to 100 birds are known to

occur. They forage for carcasses in open habitats and usually roost and breed in dense woods. They feed almost exclusively on carrion, especially large mammals. Black Vultures lay their eggs on the ground in shallow caves, in hollow trees, or in abandoned buildings. Nest sites may be used for many years if not disturbed.

**Illinois History**

In the late 1800s and early 1900s the Black Vulture was described as an uncommon bird (Ridgway 1889) and “not uncommon” in southern Illinois (Cory 1909). There is little historical information for this species in Illinois other than these accounts. It was not encountered during surveys of 1907–1909 and only rarely during surveys of 1956–1958 (Graber and Graber 1963). It is possible that the current breeding population in the state is larger now than it was a hundred years ago. Black Vultures are year-round residents in southern Illinois. The theory that the population is larger in summer than in winter and that some birds come to Illinois only in the summer months has not been substantiated.

**Breeding Bird Survey Trends**

Since Illinois is at the northern edge of the Black Vulture’s breeding range, sample sizes and relative abundances are small for both Illinois and the upper Midwest. For 1966–2000 the trend is estimated at –15.5% per year (nonsignificant,  $P = 0.74$ ) in Illinois. The trend estimate for 1966–2000 is 5.2% per year (significant,  $P = 0.03$ ) in the upper Midwest. In the southeastern states, where the center of the Black Vulture range in the U.S. occurs, the population trend estimate is 2.1% annually (nonsignificant,  $P = 0.05$ ) for 1966–2000.

*Credibility Index:*  $IL = 3$  and  $UM = 3$ .

**Distribution**

The Black Vulture’s range in Illinois consists of the three southernmost tiers of counties. These vultures are not common and are localized even in the areas where they are found. They occur primarily in agricultural and other open habitats associated with the hills and bluffs of the region.

**Frequency**

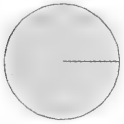
There were no records of breeding evidence for the Black Vulture, but there were 14 (1.4%) priority blocks with Observed records. Most observations during the atlas project were of soaring birds. Because this species has a very large feeding range, the atlas data is of limited value in providing a reliable record of specific breeding locations.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	0	0.0	0.0	0	0.0
Probable	0	0.0	0.0	0	0.0
Possible	0	0.0	0.0	0	0.0
Totals	0	0.0		0	0.0

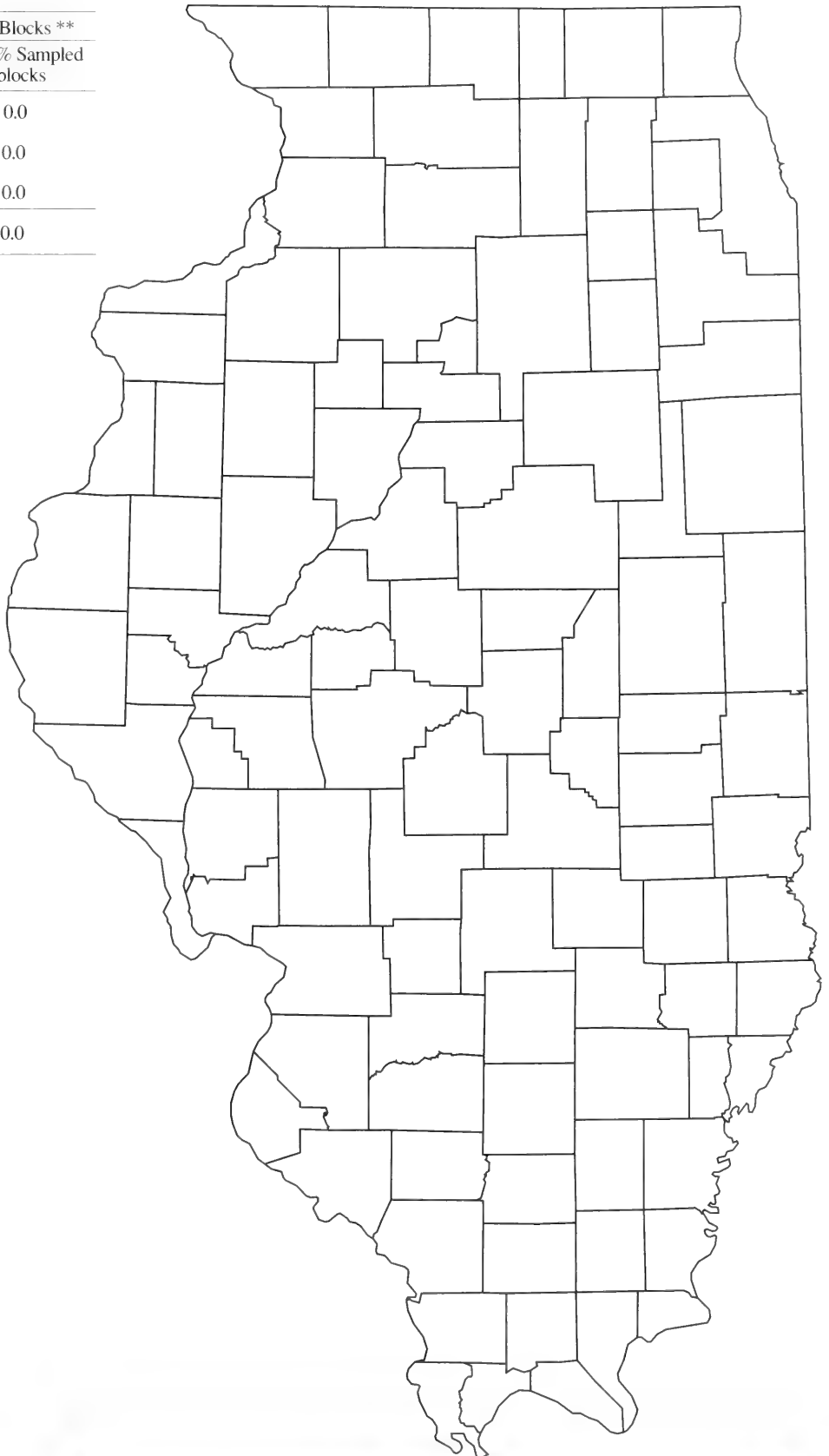
\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority  
blocks (gray = no records  
for this species)

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○







Richard Day / Daybreak Imagery

**Code: TUVU**

**Rangewide Distribution:** southern Canada, south through much of the U.S., to southern South America.

**ILLINOIS**

**Abundance:** common migrant and locally common summer resident, decreasing northward; occasional winter resident in south.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** agricultural and other open areas near bottomland hardwood forests and thickets.

**Nest:** on the ground in dark recesses (caves, rocks, and brush piles), hollow logs and, occasionally, overgrown abandoned buildings.

**Eggs:** 2, white, occasionally marked with brown.

**Incubation:** 38–41 days.

**Fledging:** from 66 to 88 days.

The Turkey Vulture is the most widely distributed of the New World vultures. It breeds from southern Canada to southern South America. In eastern North America Turkey Vultures, or buzzards, are commonly seen soaring over open or semi-open areas, especially farmland and pastures which it uses for foraging, and near forests, bluffs, and ravines which are used for roosting and nesting. The species was named for its bare, red head, which resembles that of a Wild Turkey. Turkey Vultures are easily recognized by their dark appearance, unique soaring or tilting, and wing position in flight (a shallow “V”). This species is almost exclusively a scavenger that feeds on carrion. Turkey Vultures are generally solitary foragers but can roost in large groups. They roost and nest in forests. Nests are placed on the ground in

dark cavities, such as under boulders, in hollow trees, and in abandoned buildings. Turkey Vultures can be distinguished from Black Vultures by their tendency to feed on smaller carcasses and in smaller groups (Coleman and Fraser 1987).

**Illinois History**

During the late 1800s, the Turkey Vulture was a very abundant bird in the southern half of the state but in extreme northern Illinois “it appears to be more or less rare” (Ridgway 1889). During 1907–1909 censuses, Turkey Vultures were very common in southern Illinois, fairly common in central Illinois, and virtually absent in northern Illinois. By the time the Grabers conducted their 1956–1958 censuses, the southern population had declined considerably, the central population had increased moderately, and a northern population was still nonexistent (Graber and Graber 1963). Within the last 50 years, a moderate population of Turkey Vultures has taken up summer residency in the northern portion of the state and even expanded northward into other Great Lakes states (Robbins et al. 1986). Although they are present in Illinois primarily from February through November, a few remain through the colder months during milder winters, especially in east-central and southern Illinois.

**Breeding Bird Survey Trends**

The population trend is estimated to be 25.7% per year (nonsignificant,  $P = 0.07$ ) in Illinois from 1966 to 2000 with a significant positive trend estimate for 1980–2000 (26.3%,  $P = 0.03$ ). For the upper Midwest the trend estimates are 7.4% per year (significant,  $P = 0.01$ ) for 1966–2000 and 7.5% per year (significant,  $P < 0.01$ ) for 1980–2000. The causes for the increase in population are poorly understood. *Credibility Index: IL = 3 and UM = 1.*

**Distribution**

During the atlas project, the Turkey Vulture was reported with breeding evidence in priority blocks in 17 counties scattered throughout the state. Its breeding distribution may be limited to the availability of suitable, undisturbed nesting sites. Observed records (i.e., seen but without evidence of breeding) were reported in priority blocks in 97 of the state’s 102 counties.

**Frequency**

Evidence of breeding for the Turkey Vulture was reported from 29 (2.8%) priority blocks and Confirmed as breeding in 25 of those blocks. It was also reported from 3 nonpriority blocks. A large number of observations of soaring birds (514 priority blocks with Observed records) are not considered to be evidence of breeding because they could not be directly associated with a particular nesting site or priority block.



## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	25	2.5	86.2	28	2.2
Probable	4	0.4	13.8	4	0.3
Possible	0	0.0	0.0	0	0.0
Totals	29	2.9	100.0	32	2.5

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



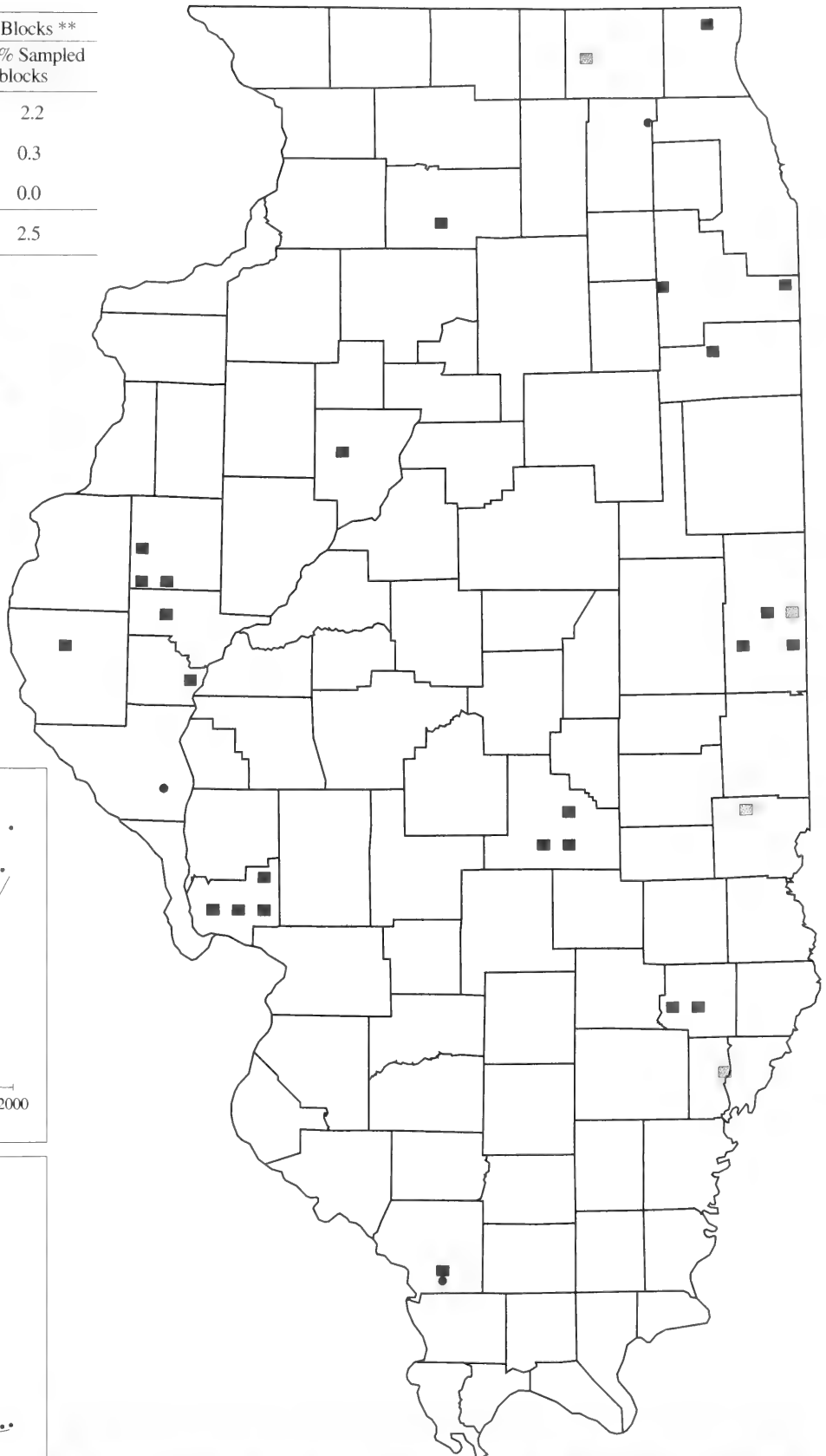
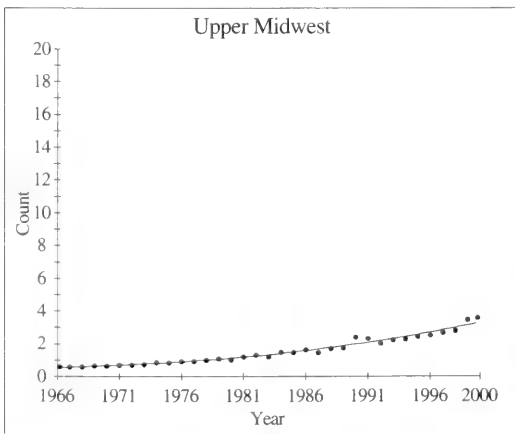
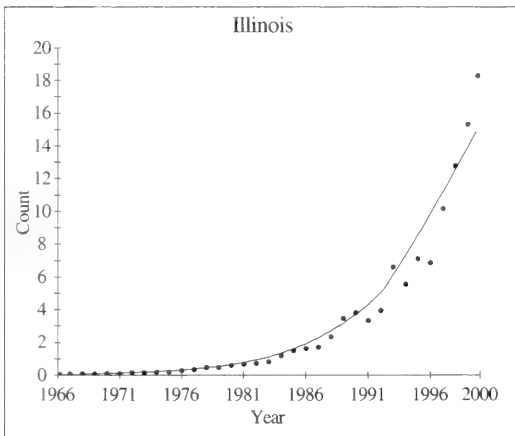
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○

## Breeding Bird Survey Trends



**Turkey Vulture**



Robert Randall

**Code: OSPR**

**Rangewide Distribution:** cosmopolitan, including Alaska to eastern Canada, south to Chile and the West Indies.

**ILLINOIS**

**Abundance:** uncommon migrant, occasional summer resident.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** along the edges of rivers and lakes.

**Nest:** platform of sticks, trash, and other items, in dead tree, artificial tower, or transmission tower.

**Eggs:** 2-4, whitish or cream-colored to cinnamon, marked with brown or olive.

**Incubation:** 32-43 days.

**Fledging:** from 48 to 59 days.

The Osprey, sometimes referred to as the Fish Hawk, is unlike most raptors in its close association with lakes, ponds, and rivers and almost exclusive diet of live fish. Except as a passing migrant flying overhead, this species is seldom observed far from open water. It captures fish by plunging and almost disappearing into the water. Ospreys nest at the tops of trees or cliffs, and increasingly on artificial structures near water. Use of the pesticide DDT caused dramatic worldwide population declines during the 1950s-1970s, but the population rebounded following a ban on DDT in the U.S. in 1972 (Poole et al. 2002). The primary breeding range in North America for the Osprey is centered in southern Canada but they can be found breeding across Canada from

Alaska to the Atlantic Ocean, in the Pacific Northwest, along the Atlantic and Pacific coasts, and at scattered locations inland.

**Illinois History**

During the 1800s, the Osprey was described as an uncommon and widespread summer resident along the major river valleys and in the northeastern wetlands (Ridgway 1889; Cory 1909); only a few actual nestings were reported. Breeding Ospreys gradually disappeared in the first half of the 1900s, with the last known nesting in the state at Crab Orchard National Wildlife Refuge in Williamson County in 1952 (Bennett 1957). Ospreys continued passing through Illinois as migrants during these years, occasionally lingering a few days at favorable locales. As a result of the population decline, the Osprey is listed as an endangered species in Illinois. After being present for several years as nonbreeding summer residents, Ospreys recently became reestablished as a successful breeding species in Illinois. The first known nesting attempts were in southern Cook County in 1996 and 1997, but they were not successful until 1998 (Thayer 1999); this nest has continued to be successful through 2001 (Kleen 2000a, 2001c, 2002a). In 2001 another pair successfully nested in Massac County, possibly the result of an expansion from a more southern population (Kleen 2002a).

**Breeding Bird Survey Trends**

Most raptors are inadequately sampled by the BBS. There is no BBS trend estimate for the Osprey population in Illinois. The trend estimate for the upper Midwest population is 29.3% per year (significant,  $P = 0.01$ ) from 1966 to 2000. *Credibility Index: IL = none and UM = 3.*

**Distribution**

Ospreys were reported in priority blocks in 2 counties during the atlas project. Other known occurrences in the state during this time period were not documented by the atlas project. The presence of successful nests in 2001 at both ends of the state indicates that Osprey may be returning as a breeding species to Illinois.

**Frequency**

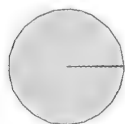
The Osprey was reported from two (0.2%) priority blocks (one southeast of Rockford and the other along the Mississippi River north of Quincy) and three nonpriority blocks (all in southern Will County). Breeding was not Confirmed in any block during the Atlas period.

## Breeding Evidence

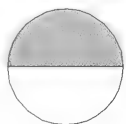
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	0	0.0	0.0	0	0.0
Probable	1	0.1	50.0	1	0.1
Possible	1	0.1	50.0	4	0.3
Totals	2	0.2	100.0	5	0.4

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

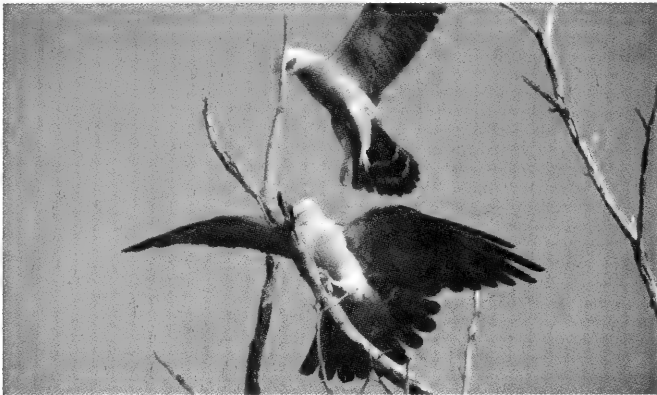


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	▒	◐
Possible	□	○



**Osprey**



Cathie Hutcheson

## Code: MIKI

**Rangewide Distribution:** southeastern and south-central U.S., winters in northern South America.

## ILLINOIS

**Abundance:** uncommon and local summer resident in southern Illinois.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** forested waterways adjacent to open lands; occasionally parks and towns.

**Nest:** platform of coarse sticks and twigs lined with green leaves and moss, in tree.

**Eggs:** 1–2, whitish to bluish white, unmarked or faintly spotted, often nest-stained.

**Incubation:** 31–32 days.

**Fledging:** about 34 days.

Mississippi Kites are graceful diurnal raptors that glide, swoop, and turn in their effortless aerial search for large flying insects. Mississippi Kites breed mainly in the southeast and south-central regions of the U.S. In the eastern U.S., Mississippi Kites nest in the canopies of mature, riparian forests adjacent to expansive open areas where an abundance of large insects, especially dragonflies, can be found (Parker 1999), generally near streams, ditches, or narrow roads. Breeding populations declined in the East following Euro-American settlement but began a gradual recovery by the mid-1900s; populations in the Great Plains have remained stable or increased in the same period (Parker 1999).

## Illinois History

During the mid-to-late 1800s, the Mississippi Kite was reported as “not an uncommon bird in some localities of the southern portion of the state” (Ridgway 1889). For unknown reasons, the population in the state disappeared in the early 1900s. It was not reported during the Gross and Ray surveys of 1907–1909 nor the Grabers surveys of 1956–1958 (Graber and Graber 1963). In 1966 a single bird was reported in northern Alexander County (George 1968). The next report was of 14 birds at the Union County Conservation Area in May of 1970 (Kleen et al., pers. obs.). By 1972 the species was once again nesting and was encountered with increasing frequency at isolated locations within sight of the Mississippi River as far north as Randolph County. Because of its history, limited distribution, and small population size, the Mississippi Kite is listed as an endangered species in Illinois. Although increasing, the population is still limited in the state.

## Breeding Bird Survey Trends

Illinois is at the northern edge of the Mississippi Kite’s breeding range and BBS data are not adequate for estimating population trends for the state or the upper Midwest region. In the southeastern U.S. where this species is more common, the trend estimate is 4.6% per year (nonsignificant,  $P = 0.14$ ) for 1966–2000.

*Credibility Index: IL= none and UM = none.*

## Distribution

The Mississippi Kite occurred irregularly along the Mississippi River as far north as Adams County during the atlas project. However, it does occur in more than the six counties in which it was found during the atlas project. Since its reestablishment in Illinois in the early 1970s, the Mississippi Kite has spread, most often as pairs, up the Mississippi River to Adams County, up the Ohio River as far east as Pope County, and short distances up the Cache, Big Muddy, and Kaskaskia rivers. Although not yet known to be breeding outside these limits, the species is venturing farther northward and could be expected to breed at any of these or other locations in the future.

## Frequency

The Mississippi Kite was reported from nine (0.9%) priority blocks; it was not found in any nonpriority block. This species was Confirmed as breeding in three priority blocks, two in Union County and one in Adams County. Nesting probably occurred in other atlas blocks as well.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	3	0.3	33.3	3	0.2
Probable	4	0.4	44.4	4	0.3
Possible	2	0.2	22.2	2	0.2
Totals	9	0.9	100.0	9	0.7

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

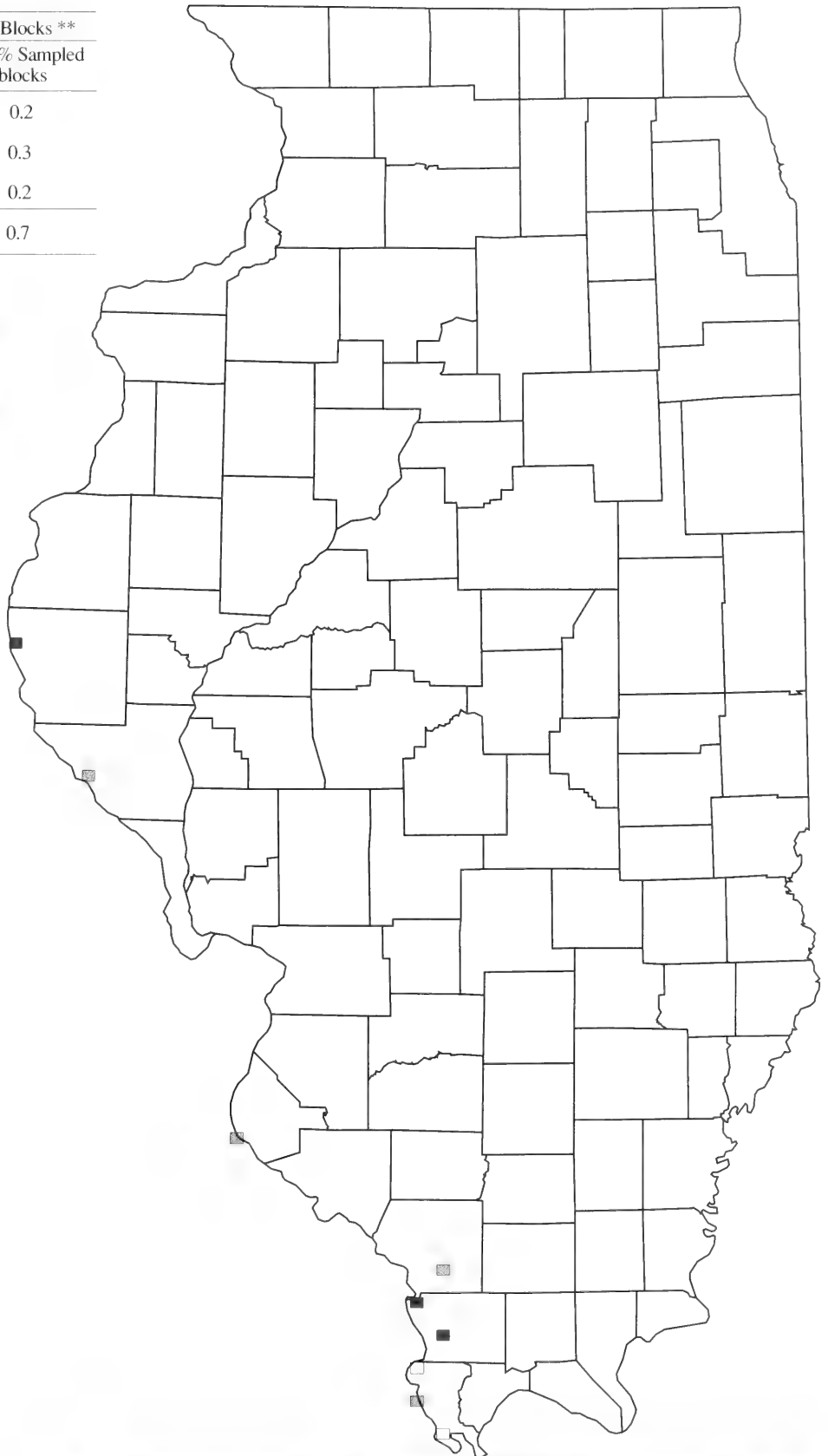


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Mississippi Kite**

## Bald Eagle

## *Haliaeetus leucocephalus*



Dennis Oehmke

**Code: BAEG**

**Rangewide Distribution:** Alaska and northern Canada, scattered through much of the U.S.

**ILLINOIS**

**Abundance:** fairly common migrant and winter resident along major rivers and lakes; rare (but increasing) summer resident.

**Endangered/Threatened Status:** threatened.

**Breeding Habitat:** isolated and undisturbed areas usually near large rivers and lakes.

**Nest:** massive platform of large sticks and vegetation, lined with finer materials, in large tree; used repeatedly for many years.

**Eggs:** 1–3 (2 normal), bluish white, often nest-stained.

**Incubation:** 34–36 days.

**Fledging:** from 70 to 98 days.

The Bald Eagle is a large bird of prey with up to a seven-foot wingspan. It breeds throughout much of Canada and parts of the U.S. from Alaska to Florida, inhabiting undisturbed areas near large rivers, lakes, and coastal areas. Eagles mate for life and build large nests in the tops of large trees near rivers, lakes, and marshes. Declines in the population began in the mid-to-late 1800s with the loss of nesting habitat and human persecution. From the 1950s through the 1970s, the future of our national bird looked grim as eagle numbers declined considerably during that time. Eagles exposed to a variety of pesticides, especially DDT, experienced decreased reproductive success (Nisbet 1989; Wiemeyer et al. 1993). Bald Eagles were listed as a federally endangered species in 1973 in most of the lower 48 states. The enactment of the Bald Eagle Protection Act in 1940 and the Endangered Species Act of 1973, the banning of DDT in 1972, and other conservation measures have contributed to the recent recovery of

the Bald Eagle population. In 1995 the U.S. Fish and Wildlife Service reclassified the Bald Eagle to threatened status in the lower 48 states.

**Illinois History**

Early accounts indicate that the Bald Eagle occurred along all of the major waterways in Illinois throughout the year (Ridgway 1889) and was a fairly common breeding species in the unsettled parts of the state (Cory 1909). Its population diminished during the early decades of the twentieth century, perhaps due to habitat loss and human persecution. The last known nest during that time was reported from Horseshoe Lake in Alexander County in 1943 (Bellrose 1944). In the 1970s eagles once again attempted nesting in Illinois, close to the Mississippi River at both ends of the state. The first known successful nest in recent times was in Alexander County in 1978, only a short distance from the last known nest. The number of nests increased gradually during the 1980s and accelerated in the 1990s. In 2001 more than half of 50+ nests in Illinois successfully fledged young (Campbell 2002). This success surpassed the U.S. Fish and Wildlife Service's projected goal of 20 active nests in Illinois by the year 2000 (Grier et al. 1983). Because of increasing populations and successful nesting, the Bald Eagle was upgraded from endangered to threatened status in Illinois in 1999.

**Breeding Bird Survey Trends**

In spite of a growing population in Illinois, there are insufficient BBS data to reliably estimate trends for this species, as is expected for raptors, threatened or endangered species, and species with small populations. The trend estimate for the upper Midwest for 1966–2000 indicates that the population is increasing at a rate of 8.4% per year (significant,  $P = 0.03$ ), though relative abundance is low.

*Credibility Index:* IL = none and UM = 3.

**Distribution**

Bald Eagles were reported along the Mississippi River, Wabash River, and at two southern Illinois refuges during the atlas project. There were at least 15 known Bald Eagle nests during the atlas project period (not all were atlas records) and since then the number has grown to more than 50 nests (Campbell 2002). Its present distribution in the state is now similar to that of a century ago, that is, along most of the major rivers and lakes and in the more unsettled parts of the state.

**Frequency**

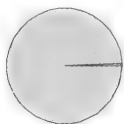
The Bald Eagle was reported from six (0.6%) priority blocks and no nonpriority blocks. Breeding was Confirmed in all six blocks in which it was reported.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	6	0.6	100.0	6	0.5
Probable	0	0.0	0.0	0	0.0
Possible	0	0.0	0.0	0	0.0
Totals	6	0.6	100.0	6	0.5

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)



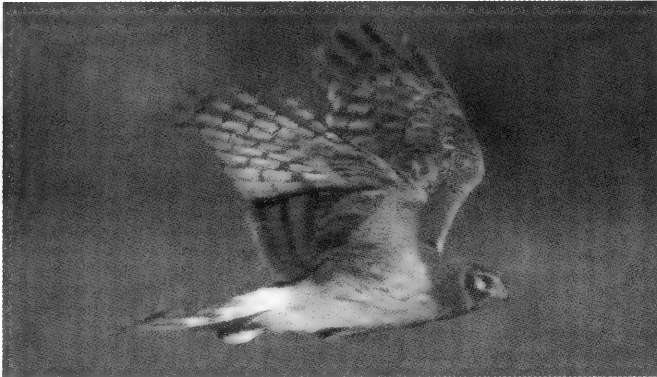
% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Bald Eagle**





Richard Day / Daybreak Imagery

## Code: NOHA

**Rangewide Distribution:** Eurasia, Alaska and northern Canada, south through all the U.S and into northern South America.

## ILLINOIS

**Abundance:** common migrant, uncommon winter resident, rare summer resident.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** prairies, wet meadows, and marshes; occasionally reclaimed strip mines.

**Nest:** sticks and grass, on elevated ground in thick vegetation.

**Eggs:** normally five, bluish white, unmarked (occasionally spotted with browns).

**Incubation:** 31–32 days.

**Fledging:** from 30 to 35 days.

A species of open country, upland grasslands, marshes, and wet meadows, the Northern Harrier breeds throughout North America and Eurasia. In North America it is widely but locally distributed as a breeding species in most of Canada and in the U.S. north of the southern tier of states. Previously known as the Marsh Hawk, the Northern Harrier is a long-winged, long-tailed hawk with a white rump. It is often observed flying low to the ground, swaying back and forth during its flights from field to field. Unlike most raptors, the male and female differ in color (the male has a pale gray plumage and the female is mostly brown). Northern Harriers nest on the ground in grassy areas and feed on a wide variety of ground-dwelling vertebrates (mammals, small birds, reptiles, and amphibians). The North American population

has declined in the twentieth century mostly due to loss of wetlands and grasslands (MacWhirter and Bildstein 1996).

## Illinois History

Mid-to-late nineteenth century accounts indicate that the Northern Harrier had an extensive statewide distribution (Ridgway 1889) and was a common summer resident (Cory 1909). Fifty years later, in the Chicago region, it was reported as a “common resident; more numerous in the summer” (Ford 1956). As marshes and prairies disappeared, so did the Northern Harrier. When pesticides that caused the thinning of egg shells were in use during the 1950s to 1970s, harrier populations declined even further (Anderson and Hickey 1972). Since harriers prefer large grasslands with a variety of cover types, such as prairie grasses, brome, timothy, and fallow fields, potential nest habitat has become limited in Illinois (Herkert 1992). As a result of loss of large grasslands and marshes and a low population level, the Northern Harrier is listed as an endangered species in Illinois. Large grasslands created by programs such as the Conservation Reserve Program may provide important habitat for this species now and in the future.

## Breeding Bird Survey Trends

This species, as with other raptors, is not adequately sampled by the BBS and in Illinois the sample size and relative abundance are low. Trend estimates are 3.4 (nonsignificant,  $P = 0.70$ ) and 1.0% per year, (nonsignificant,  $P = 0.35$ ) in Illinois and the upper Midwest, respectively, for the period 1966–2000.

*Credibility Index:* IL = 3 and UM = 2.

## Distribution

The Northern Harrier had a small and widely scattered distribution throughout the state during the atlas project. It was reported in priority blocks in 28 counties. Two current and consistent nesting sites in Illinois occur in the Prairie Ridge State Natural Area in Jasper and Marion counties; these sites were not sampled during the atlas project.

## Frequency

The Northern Harrier was reported in 45 (4.5%) priority blocks and 14 nonpriority blocks. It was Confirmed as breeding in 4 (0.4%) of the priority blocks (3 in Vermilion County and 1 in Knox County). Wandering and nonbreeding individuals can be found occasionally throughout the summer months; therefore, sight records alone are not evidence of breeding in the area.



## Breeding Evidence

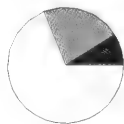
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	4	0.4	8.9	5	0.4
Probable	10	1.0	22.2	13	1.0
Possible	31	3.1	68.9	41	3.2
Totals	45	4.5	100.0	59	4.6

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

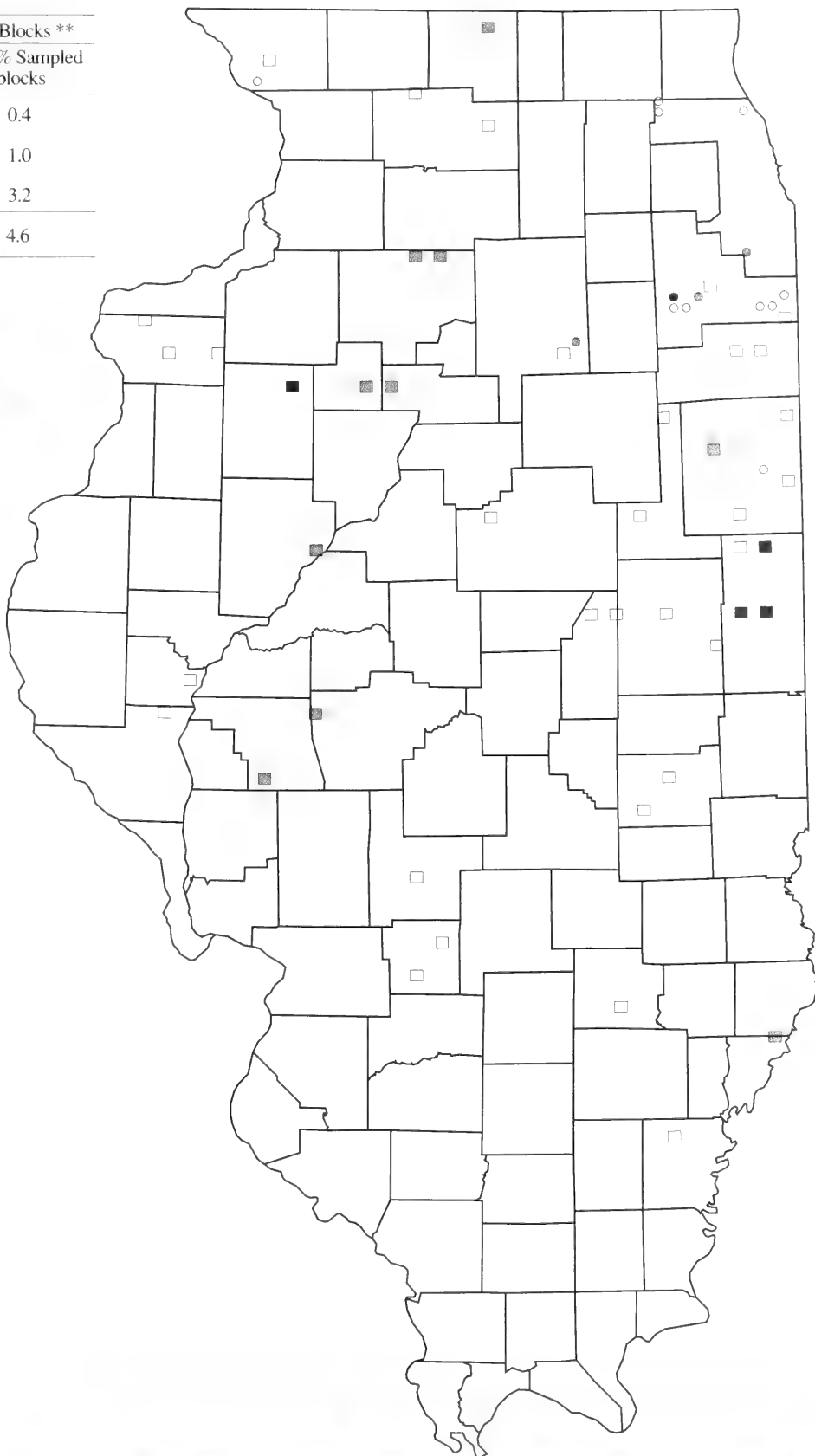


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Northern Harrier**



Eric Walters

**Code:** SSHA

**Rangewide Distribution:** most of North America below the Arctic Circle, south through the northern half of South America.

**ILLINOIS**

**Abundance:** common migrant, uncommon winter resident, very rare summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous or coniferous woodlands with openings.

**Nest:** broad, flat platform of sticks and twigs lined with finer materials, near trunk of tree.

**Eggs:** 4–5, white to bluish white wreathed with brown marks.

**Incubation:** 32–35 days.

**Fledging:** from 24 to 27 days.

In North America the breeding range of the Sharp-shinned Hawk, the smallest accipiter on the continent, includes most of Canada, the northeastern and western U.S., and central Mexico. It is an aggressive bird that feeds almost entirely on small birds and is often found in places where small birds congregate, like winter bird feeders. It can usually be distinguished from the larger Cooper's Hawk by its squared-off tail. The Sharp-shinned Hawk breeds in deciduous, coniferous, and mixed deciduous-coniferous forests as well as open woodlands; it prefers to nest in forests with some conifers. Its stick nest is placed in the tree canopy. The nesting Sharp-shinned often goes undetected because it is secretive during the nesting season and quietly slips away

from its nest when intruders approach rather than actively defending it as the Cooper's Hawk does. Historically the loss of large forest tracts has impacted its abundance and distribution and population declines in the East in the 1950s to 1970s were probably due to the effects of DDT (Bildstein and Meyer 2000).

**Illinois History**

According to early accounts (Nelson 1876; Cory 1909), the Sharp-shinned Hawk was primarily a migrant through Illinois with perhaps a few summer residents and breeding pairs. The only recorded nests for Illinois during the first half of the twentieth century were in Cook County in 1901 (Ford 1956) and Winnebago County in 1947 (Bohlen 1989). The species continues to be a rare and sporadic breeder in Illinois. Nesting has been documented as far south as Alexander (S. Bailey, pers. comm.) and Pope counties (Graber and Graber 1981). Because of a precipitous population decline (thought to be due to DDT-DDE exposure) in the eastern United States during the 1950s through 1970s (Anderson and Hickey 1972), its intolerance to civilization, and its limited breeding occurrence in Illinois, the Sharp-shinned Hawk was afforded endangered species status in Illinois in 1989 (Herkert 1992). It was delisted in 1999 because of a significant national recovery and because Illinois is at the southern edge of its primary breeding range. During spring and fall migration, it is the most common of the three accipiter species that occur in the state.

**Breeding Bird Survey Trends**

This species occurs marginally as a breeding species in Illinois and is not adequately sampled by the BBS; therefore, trend estimates are not available for the state. The trend estimate for the upper Midwest for 1966–2000 is 7.2% per year (significant,  $P < 0.01$ ); relative abundance is low. *Credibility Index:* IL = none and UM = 3.

**Distribution**

Atlas data indicate that the Sharp-shinned Hawk was a rare but widely distributed species in Illinois during the summer months. Atlas data did not provide new information pertaining to the breeding status of this species. It is still encountered more often in the northern counties, as it was a century ago, where it occasionally breeds in pine plantations.

**Frequency**

The Sharp-shinned Hawk was reported in nine (0.9%) priority blocks and nine nonpriority blocks. Breeding was Confirmed in three (0.3%) of the priority blocks, one each in Vermilion, Stephenson, and Jo Daviess counties.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	3	0.3	33.3	4	0.3
Probable	1	0.1	11.1	2	0.2
Possible	5	0.5	55.6	12	0.9
Totals	9	0.9	100.0	18	1.4

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

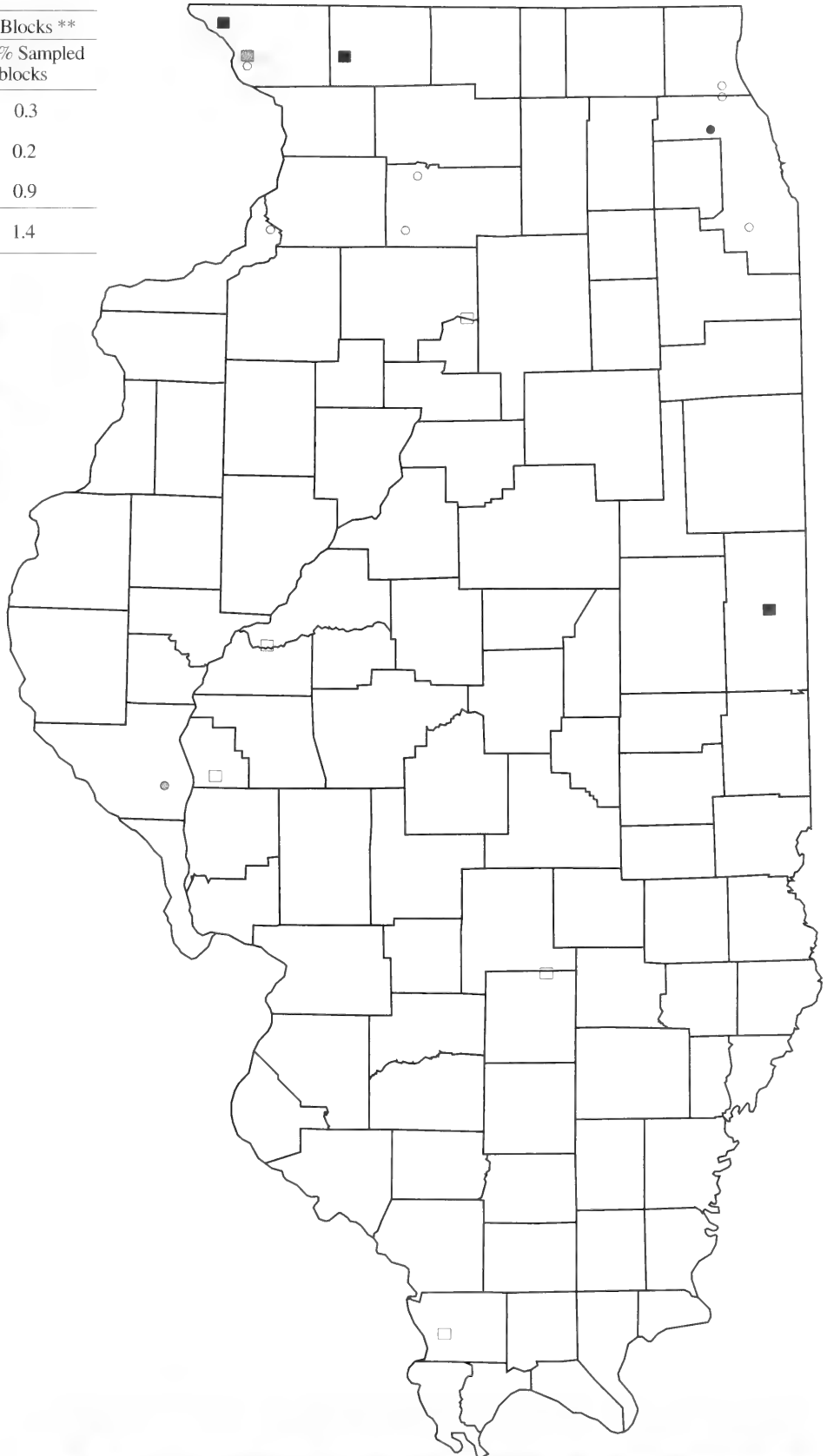


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Sharp-shinned Hawk**



Dennis Oehmke

**Code:** COHA

**Rangewide Distribution:** southern Canada, south through all of the U.S. and Mexico.

**ILLINOIS**

**Abundance:** uncommon migrant and winter resident, uncommon and increasing summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous and coniferous forests and open woodlands.

**Nest:** flat, but deep, platform of sticks and twigs lined with chips or strips of bark, in a tree.

**Eggs:** 4–5, bluish to greenish white, usually nest-stained with brownish spots.

**Incubation:** 32–36 days.

**Fledging:** from 27 to 34 days.

This woodland raptor is broadly distributed in North America, with a breeding range that includes southern Canada, most of the U.S., and parts of Mexico. Also known as the chicken hawk, the Cooper's Hawk feeds primarily on birds, although its diet also includes mammals and reptiles. Like the Sharp-shinned Hawk, the Cooper's Hawk can be found in deciduous woods, coniferous woods, and open woodlands. Cooper's Hawks usually select mature forests or woodlots for nesting but have recently adapted to urban and suburban areas. Their nests are placed in a main crotch or on a limb against the trunk of a large, mature, canopy tree. Habitat loss and the effects of pesticides such as DDT

contributed to the population decline in the eastern part of its range that began in the early 1900s and continued through the 1970s (Rosenfield and Bielefeldt 1993; Jackson et al. 1996). Loss of suitable habitat is still an important factor in current distribution and population trends (Jackson et al. 1996).

**Illinois History**

More than a century ago the Cooper's Hawk was considered to be a common summer resident of all wooded portions of the state (Ridgway 1889; Cory 1909). During the first half of the twentieth century, it was reported as fairly common (Ford 1956). It is not known if or how much the population declined during these earlier years, which would have included persecution for attacks on chickens. At the time that the Cooper's Hawk was listed as an endangered species in Illinois in 1977, the breeding population was very low (Herkert 1992). During the 1980s and 1990s, the population rebounded, not yet to its former numbers, but sufficiently enough to be delisted in 1999. Cooper's Hawks are now regularly found year-round at residential bird feeders.

**Breeding Bird Survey Trends**

The BBS does not adequately sample most raptor species. In Illinois the trend estimate is 0.3% per year (nonsignificant,  $P = 0.91$ ) for 1966–2000, but sample size and relative abundance are low. For the upper Midwest the estimated trend in population for Cooper's Hawks is 9.7% per year (significant,  $P < 0.01$ ) from 1966 to 2000.

*Credibility Index:* IL = 3 and UM = 3.

**Distribution**

During the atlas project, the Cooper's Hawk was recorded in priority blocks mainly in the northeast and far east-central parts of the state. Since the atlas project, it has returned to many of its former haunts and is once again a breeding species of statewide, but limited, distribution.

**Frequency**

The Cooper's Hawk was reported from 45 (4.5%) priority blocks and 43 nonpriority blocks. It was Confirmed as breeding in 21 (2.1%) of the priority blocks, particularly in Vermilion and the northeastern counties. The most frequently used breeding evidence criteria for Confirmed records in priority blocks were fledged young (6 FL records), nest with young (5 NY records), and occupied nest (4 ON records).

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	21	2.1	46.7	41	3.2
Probable	7	0.7	15.6	15	1.2
Possible	17	1.7	37.8	32	2.5
Totals	45	4.5	100.0	88	6.8

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

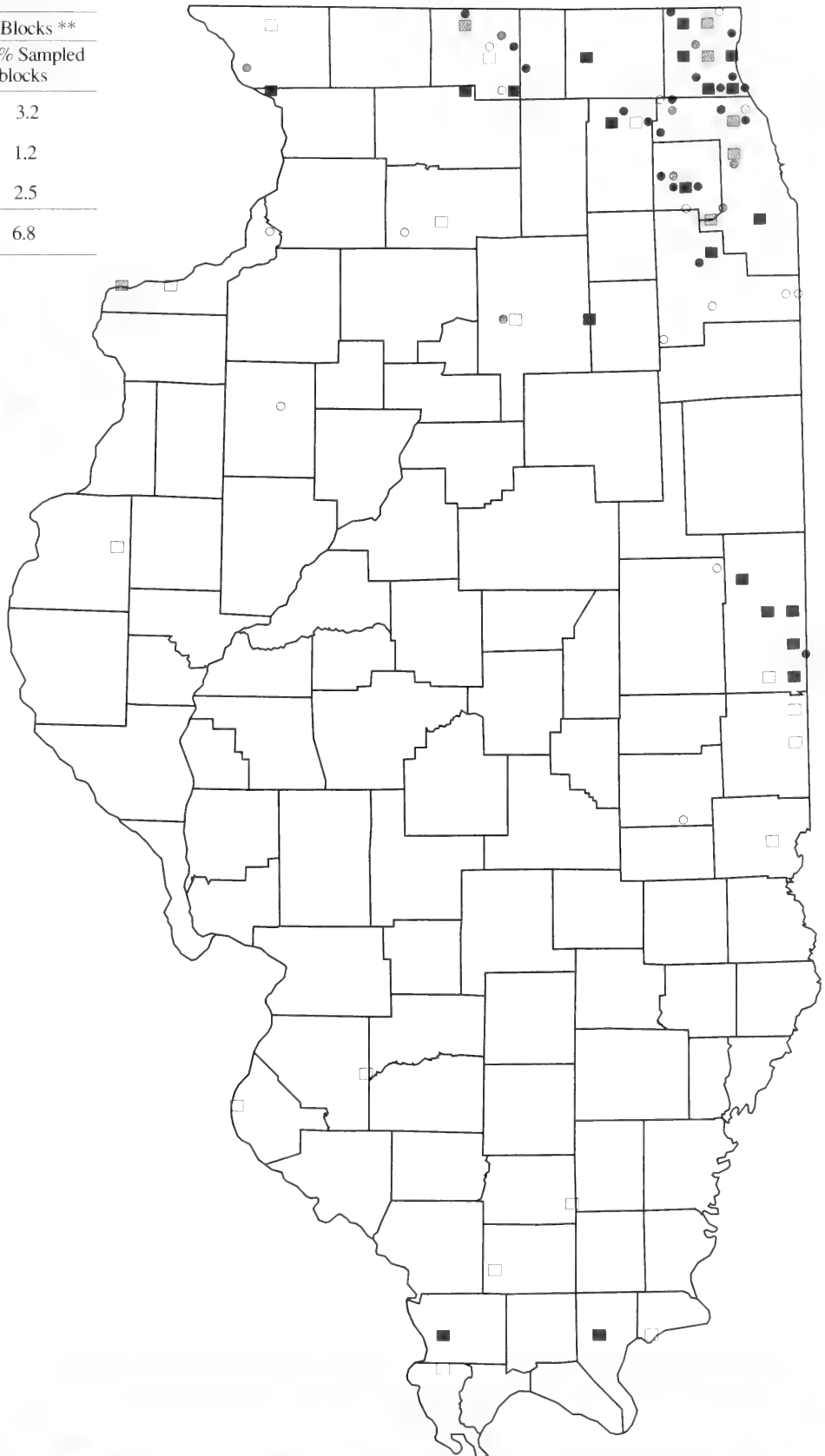


% of 998 sampled priority blocks (gray = no records for this species)

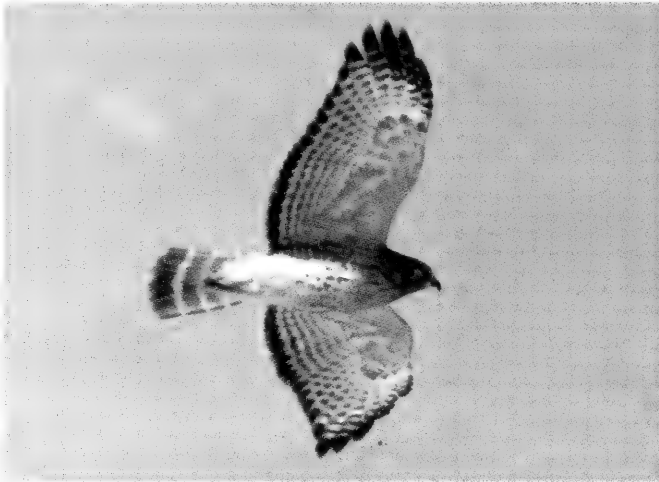


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Cooper's Hawk**



Joe Milosevich

**Code: RSHA**

**Rangewide Distribution:** eastern U.S. and California coast, south into Mexico.

**ILLINOIS**

**Abundance:** uncommon migrant, winter resident and summer resident, decreasing northward.

**Endangered/Threatened Status:** threatened.

**Breeding Habitat:** riparian forests and swamps.

**Nest:** platform of sticks, twigs, bark strips, and leaves lined with finer materials, in crotch of a tree.

**Eggs:** 2–4, white to bluish white with brown marks (often nest-stained).

**Incubation:** 28 days.

**Fledging:** from 39 to 45 days.

Red-shouldered Hawks breed primarily in the eastern half of the U.S. and along the California coast. Although they can be observed almost any time of day, they are usually most active in midmorning when they are most often heard calling and seen soaring over their territories. Red-shouldered Hawks are most commonly found in bottomland forests or wooded swamps. The Red-shouldered Hawk is a species that often hunts from a perch and forages along streams and backwaters for crayfish, amphibians, reptiles, small mammals, and birds. Its stick nest is usually placed in a substan-

tial crotch next to the main trunk of a large tree well inside the forest. Once considered common in the eastern part of its range, the population of this woodland species has declined as bottomland forests have become fragmented and cleared (Bednarz and Dinsmore 1981; Jackson et al. 1996).

**Illinois History**

In the late nineteenth century, the Red-shouldered Hawk was considered to be the “most numerous of the large hawks in most portions of Illinois, especially timbered districts” (Ridgway 1889) and a common summer resident in Illinois (Cory 1909). During the first half of the twentieth century, it was a common summer resident in the Chicago area (Ford 1956). Since these accounts, the statewide population of Red-shouldered Hawks has plummeted because of modification and destruction of bottomland forests (Herkert 1992). Although a local stronghold remained in the swamps of southern Illinois, the Red-shouldered Hawk was listed as an endangered species in Illinois in 1977. During the 1980s and 1990s, it returned as a nesting species to parts of its former range and as a result its status was upgraded to threatened in 1999.

**Breeding Bird Survey Trends**

This species is seen on few BBS routes and in low numbers in the state. For 1966–2000, trend estimates are –0.6% per year (nonsignificant,  $P = 0.88$ ) for Illinois and 0.0% per year (nonsignificant,  $P = 0.99$ ) for the upper Midwest.

**Credibility Index:** IL = 3 and UM = 3.

**Distribution**

The Red-shouldered Hawk was most frequently reported from priority blocks in southern Illinois during the atlas project. This hawk was also found in appropriate habitat (i.e., floodplain forests) at scattered sites throughout the state, and in wooded residential areas in northeastern Illinois. It was reported in priority blocks in 29 counties.

**Frequency**

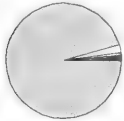
The Red-shouldered Hawk was reported from 45 (4.5%) priority blocks and 18 nonpriority blocks. Breeding was Confirmed in 14 (1.4%) of the priority blocks, primarily in southern and northern counties. The most frequently used evidence of breeding for Confirmed records in priority blocks was fledged young (7 FL records) or nest with young (5 NY records).

## Breeding Evidence

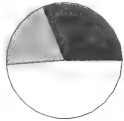
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	14	1.4	31.1	23	1.8
Probable	9	0.9	20.0	12	0.9
Possible	22	2.2	48.9	28	2.2
Totals	45	4.5	100.0	63	4.9

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

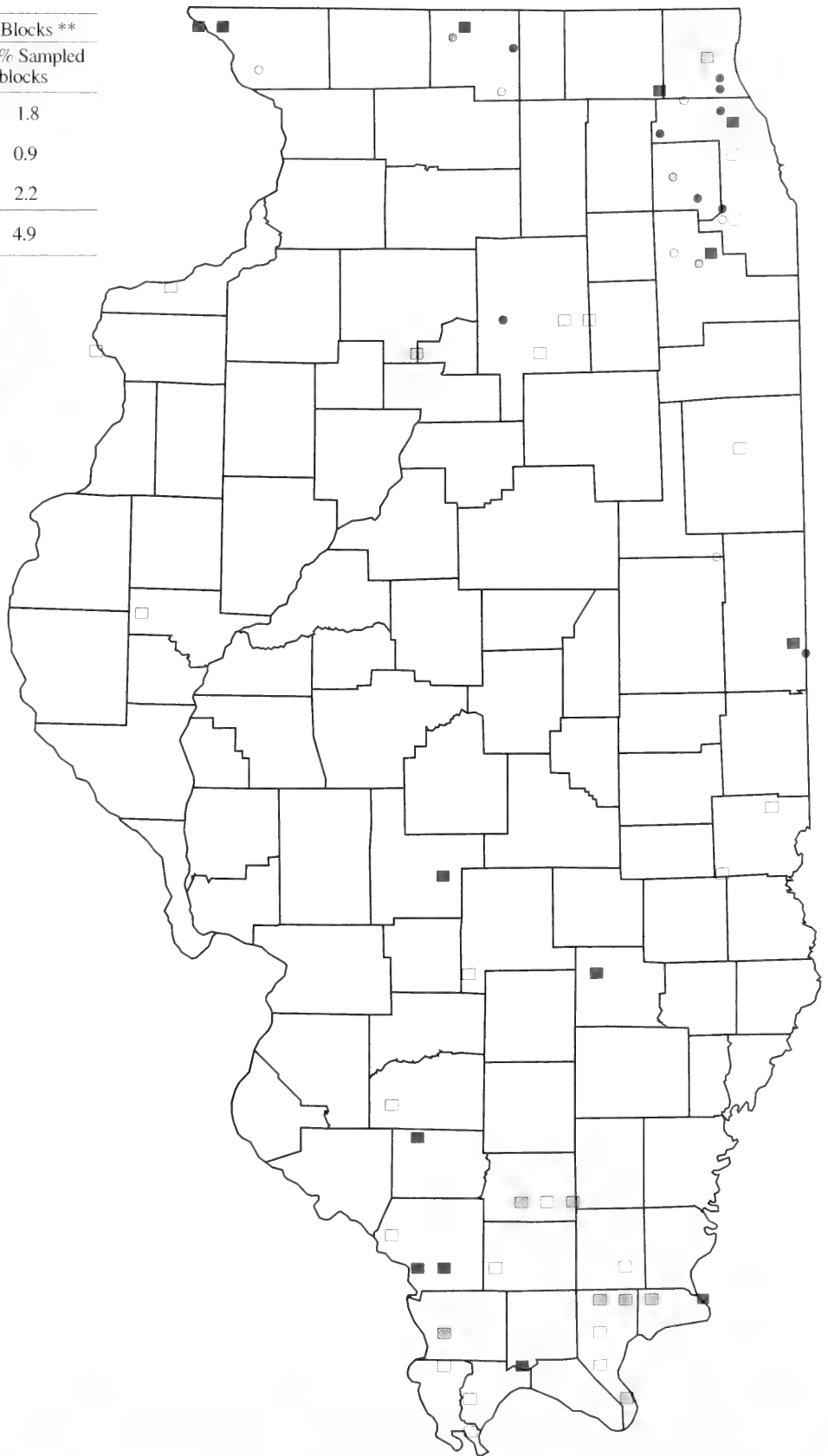


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Red-shouldered Hawk**



Joe Milosevich

**Code: BWAH**

**Rangewide Distribution:** central and southern Canada and eastern U.S., south to central South America.

**ILLINOIS**

**Abundance:** common migrant and rare (local) summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** dense and contiguous deciduous or mixed deciduous-coniferous forests often near water.

**Nest:** loose, relatively small platform of sticks, twigs and dead leaves lined with strips of bark and green leaves, in tree.

**Eggs:** 2–3, white to bluish white, wreathed with brown marks.

**Incubation:** 28–32 days.

**Fledging:** about 35 days.

This small buteo is a common breeder in the large forests in northeastern and north-central North America and is known to breed throughout the eastern half of the U.S. and much of southern Canada. The Broad-winged Hawk is known for its impressive migrations when flocks of up to several thousand birds congregate in air thermals. Nesting pairs are easiest to detect in early spring when performing aerial courtship flights above the treetops and emitting their drawn-out, high-pitched whistles. Nests are placed within the forest and can

be difficult to find. For nesting, Broad-winged Hawks prefer large, contiguous tracts of undisturbed, mature upland forest (deciduous or mixed deciduous-coniferous) with dense understory located close to small forest openings or edges, typically near ponds, streams, or other wet areas. They place their nests in the crotch of a main branch relatively high in a large tree. The Broad-winged Hawk diet includes small mammals, birds, frogs, and snakes.

**Illinois History**

During the late nineteenth century, the Broad-winged was a “more or less common summer resident in Illinois” (Cory 1909). In the first half of the twentieth century, it was a rare summer resident in the Chicago region (Ford 1956). Based on the lack of reports, including those from censuses of 1907–1909 and 1956–1958 (Graber and Graber 1963), it would appear that the breeding population of Broad-winged Hawks may have always been low in Illinois. Because of the loss and fragmentation of large, contiguous forests, these hawks have probably disappeared from many areas and are less common now than in the past.

**Breeding Bird Survey Trends**

Like most raptors, this species is not adequately sampled by the BBS. Too few individuals occur on BBS routes in Illinois to allow for a reliable trend estimate. For the upper Midwest the trend estimate is 0.00% per year (nonsignificant,  $P = 1.00$ ) between 1966 and 2000.

*Credibility Index: IL = none and UM = 2.*

**Distribution**

During the atlas project, the Broad-winged Hawk was found statewide but not frequently. Since breeding evidence for Broad-winged Hawks is difficult to detect, it is possible that they are more common and widespread than atlas data indicate.

**Frequency**

The Broad-winged Hawk was reported from 51 (5.1%) priority blocks and 33 nonpriority blocks. Breeding was Confirmed in 9 (0.9%) of the priority blocks. Because of their secretive and quiet nature during the nesting period, Broad-winged Hawks were probably overlooked and likely occurred more frequently than indicated by the atlas data. It is also possible that they nested in many blocks from which they were reported but not Confirmed.



## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	9	0.9	17.6	19	1.5
Probable	7	0.7	13.7	14	1.1
Possible	35	3.5	68.6	51	4.0
Totals	51	5.1	100.0	84	6.5

\* 998 priority blocks

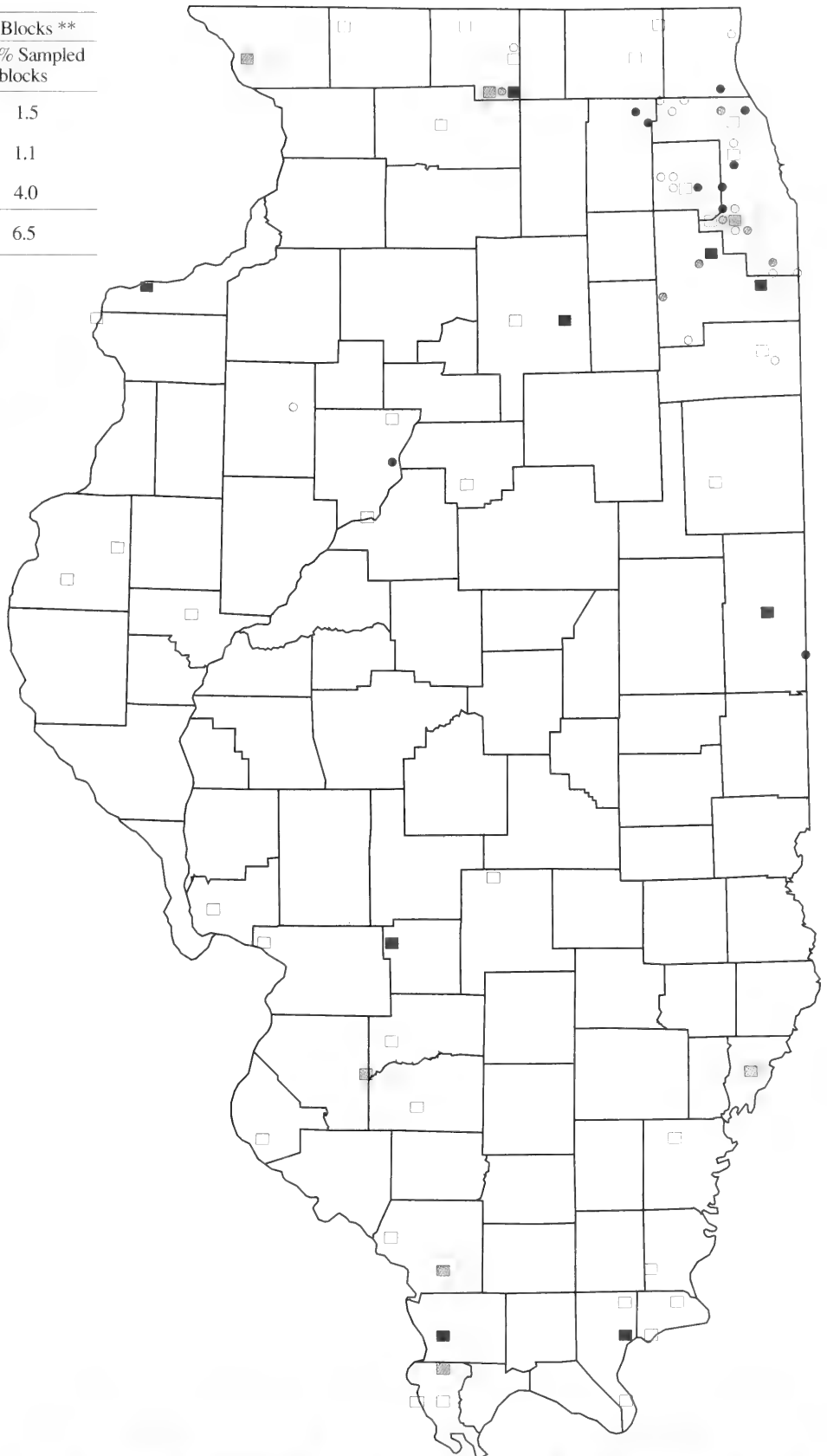
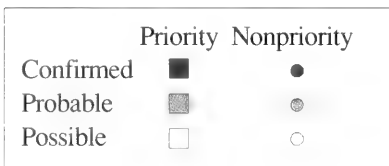
\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



**Broad-winged Hawk**



Joe Milosevich

**Code:** SWHA

**Rangewide Distribution:** southwestern and south-central Canada and western U.S., south to southern South America.

**ILLINOIS**

**Abundance:** rare migrant, very local summer resident in north.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** open to semi-open grasslands, agricultural areas with nearby trees.

**Nest:** large platform of sticks, twigs, and grass often lined with bark, leaves, or other materials, in a tree.

**Eggs:** 2–3, bluish or greenish white, sparsely marked with brown.

**Incubation:** 34–35 days.

**Fledging:** about 30 days.

The Swainson's Hawk is a common hawk in its breeding range, which is the prairie region of Canada, the western U.S., and northern Mexico. The distance they travel during migration is one of the farthest among North American raptors. Large flocks soar southward each fall through Central America to the pampas in southern South America. This species inhabits open and semi-open grasslands, prairies, and agricultural areas where it generally nests in isolated trees. Swainson's Hawks feed on insects, mammals, birds, and reptiles. Human disturbance, the effects of

pesticide usage on insect populations, and persecution in its wintering and breeding ranges are causes for concern for this species' future.

**Illinois History**

During the latter part of the nineteenth century, there may have been a small, widely spread, disjunct population in the northern two-thirds of Illinois (Nelson 1876; Ridgway 1889; Hess 1910). There were no documented records until 1947 when a nest was reported in Winnebago County (Prentice 1949); three more nests were reported from there in 1958 (Bohlen 1989). In 1973, a small population that still exists today was discovered in northwestern Kane and southern McHenry counties; five nests were found that first year and two repeated in 1974 (Kier and Wilde 1976). Since then, the Illinois population has been restricted to that isolated area and each year (through 2001) a few birds have returned to nest. The Swainson's Hawk is listed as an endangered species in Illinois because of its low population level and limited distribution. The population continues to be extremely small and vulnerable with only one or two known nests annually (Herkert 1992).

**Breeding Bird Survey Trends**

With only a few pairs breeding in the state, no trend estimate is available for Illinois from BBS data. The trend estimate for 1966–2000 is 1.9% per year (nonsignificant,  $P = 0.70$ ) for the upper Midwest where the species is recorded on few routes and in low numbers.

*Credibility Index:* IL = none and UM = 3.

**Distribution**

Illinois is at the eastern edge of the breeding range of the Swainson's Hawk. Its breeding distribution in the state is easy to describe: It has been limited for nearly 30 years to northwestern Kane County and southern McHenry County. The Illinois population is a disjunct population well east of its primary breeding range.

**Frequency**

The Swainson's Hawk was reported in five contiguous priority blocks in Kane and McHenry counties, and Confirmed as breeding in one of the Kane County blocks. It was also reported from one nonpriority block in Kane County, where it was Confirmed.

## Breeding Evidence

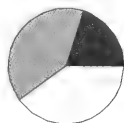
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	20.0	2	0.2
Probable	2	0.2	40.0	2	0.2
Possible	2	0.2	40.0	2	0.2
Totals	5	0.5	100.0	6	0.5

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed		
Probable		
Possible		



**Swainson's Hawk**



Joe Milosevich

**Code: RTHA**

**Rangewide Distribution:** all of North America from the Arctic Circle through Central America.

**ILLINOIS**

**Abundance:** common migrant, summer resident and winter resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** wide variety of habitats from woodlands to open country with scattered trees.

**Nest:** bulky platform of sticks and twigs lined with strips of bark and leaves, in a tree.

**Eggs:** 2–3, white to bluish white, often spotted with brown.

**Incubation:** 30–35 days.

**Fledging:** about 45 days.

fields, urban areas where prey is plentiful, and often in rural woodlots and forests where the nest is near the forest edge but can be well hidden. The Red-tailed Hawk tends to nest in smaller and less dense woodlands and closer to human dwellings than the Red-shouldered Hawk (Bednarz and Dinsmore 1982). Prey includes rabbits, squirrels, mice, birds, reptiles, and amphibians.

**Illinois History**

During the late nineteenth century, the Red-tailed Hawk was very common in most portions of Illinois, but not as common as the Red-shouldered Hawk (Ridgway 1889). Throughout the twentieth century the Red-tailed Hawk has continued to be a common species despite shooting and other human interference.

**Breeding Bird Survey Trends**

BBS data indicate an increase in the Illinois Red-tailed Hawk population of 11.1% per year (significant,  $P < 0.01$ ) from 1966 to 2000, with a decline during the 1966–1979 period of –9.1% per year (significant,  $P = 0.02$ ), followed by an increase of 10.9% per year (significant,  $P < 0.01$ ) for the 1980–2000 period. For the upper Midwest the trend estimate for 1966–2000 is 5.0% per year (significant,  $P < 0.01$ ).

*Credibility Index:* IL = 2 and UM = 2.

**Distribution**

The Red-tailed Hawk was a common and widely distributed breeding species that was reported in priority blocks in every county during the atlas project. In addition to the breeding population, there are distinct wintering and migratory populations; the interrelationship of these populations is not yet understood.

**Frequency**

The Red-tailed Hawk was reported from 720 (72.1%) priority blocks and 133 nonpriority blocks. Breeding was Confirmed in 179 (17.9%) of the priority blocks, with the most commonly used breeding evidence being fledged young (83 FL records) followed by occupied nest (31 ON records), nest with young (29 NY records), and adults feeding young (27 FY records). Since Red-tailed Hawks are a conspicuous species, they were most likely found if present. Even though these hawks have fairly large home ranges, it is likely that nesting occurred in the majority of atlas blocks in which they were reported.

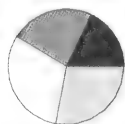
The Red-tailed Hawk is a large hawk often seen conspicuously perched on fence posts and utility poles or sailing effortlessly overhead along highways. The rusty-red tail of the adult birds is a prominent identification feature. Red-tailed Hawks are common and widespread in North America where they breed throughout Canada, the U.S., and much of Mexico and Central America. Historically, populations have increased in range as forests were cleared for agriculture (Preston and Beane 1993). The Red-tailed nests in open areas with interspersed woodlands, isolated trees in the middle of

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	179	17.9	24.9	243	18.9
Probable	234	23.4	32.5	266	20.7
Possible	307	30.8	42.6	344	26.7
Totals	720	72.1	100.0	853	66.3

\* 998 priority blocks

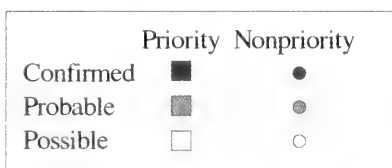
\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

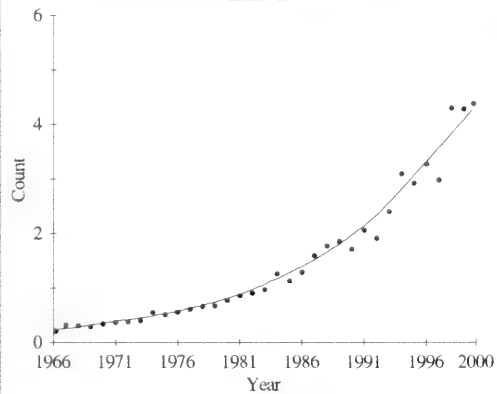


% of priority blocks with records for this species

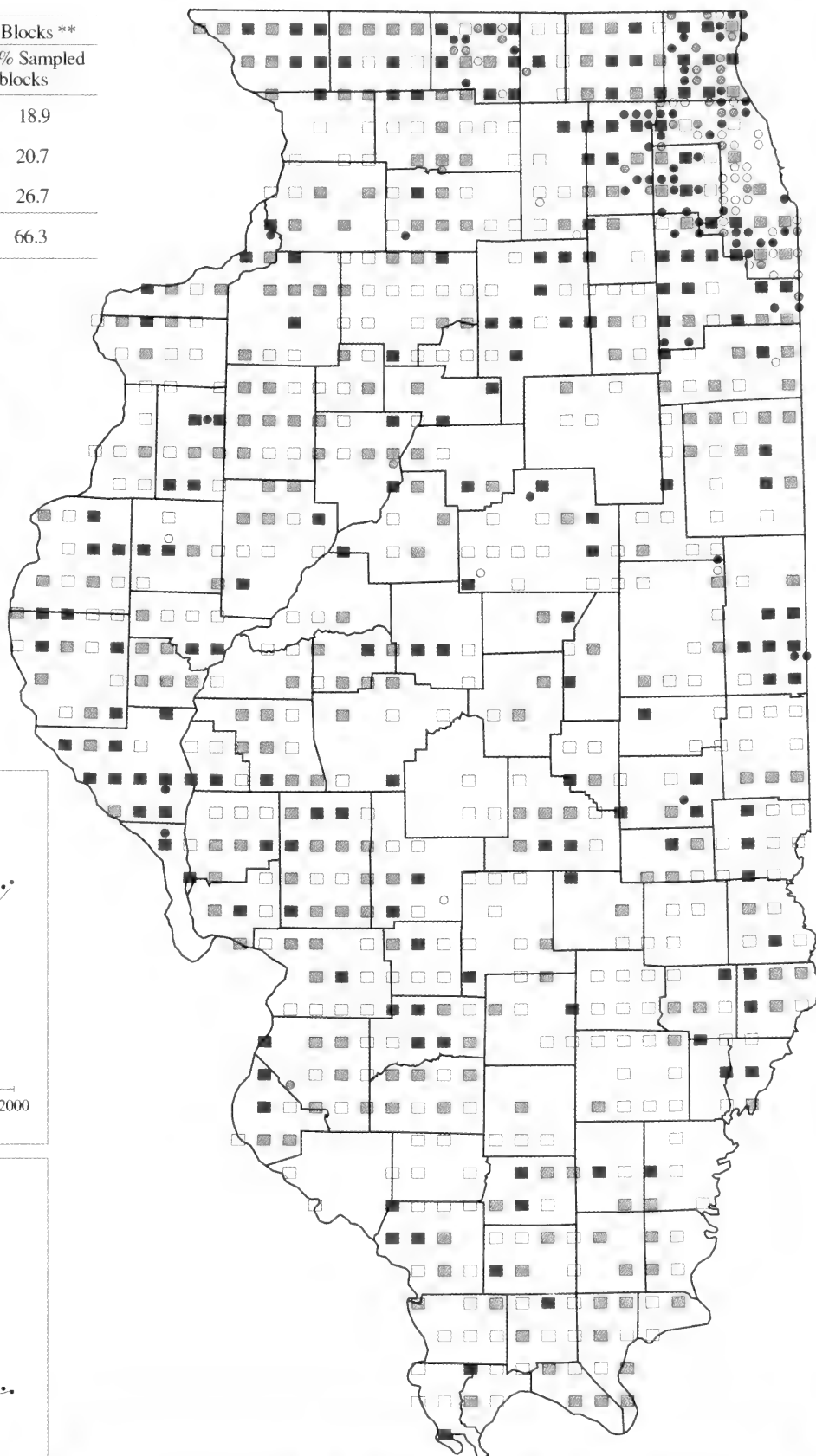
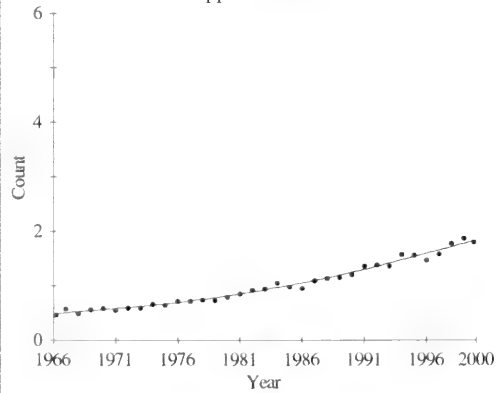


## Breeding Bird Survey Trends

Illinois



Upper Midwest



**Red-tailed Hawk**



Richard Day / Daybreak Imagery

**Code: AMKE**

**Rangewide Distribution:** all of North America south of the Arctic, south throughout South America.

**ILLINOIS**

**Abundance:** common migrant, summer resident and winter resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open or partly open areas with scattered trees; also, cultivated and urban areas.

**Nest:** in tree cavity, very little nest material added; nest boxes readily accepted.

**Eggs:** 4–5, white to pinkish white, usually marked with browns or lavenders.

**Incubation:** 29–31 days.

**Fledging:** about 30–31 days.

The American Kestrel, formerly known as the Sparrow Hawk, is common and widespread throughout North America, where its breeding range includes most of Canada, all of the U.S., and parts of Mexico. It breeds from Alaska to South America. Kestrels are often seen perched on telephone wires and in the tops of trees and are known for their hovering and pouncing behavior in the process of obtaining prey, such as small mammals, birds, amphibians, reptiles, and insects. Kestrels require short grassy areas with abundant prey and a secure cavity in which to raise their young. They nest in many habitats, usually in rural areas but sometimes in

towns and cities; however, they avoid deep woods. Kestrels utilize tree cavities, holes in walls of buildings, and nest boxes. The American Kestrel is one of the few raptors that have distinctly different male and female plumages.

**Illinois History**

During the latter part of the nineteenth century and early half of the twentieth century, the American Kestrel was considered a common summer resident (Cory 1909; Ford 1956). There was “an apparent marked reduction in the statewide population of the [sparrow hawk] between 1909 and 1957” (Graber and Graber 1963). During the censuses of 1907–1909, the bulk of the breeding population was in the southern zone while in censuses of 1956–1958, they were more common in the central zone with the southern zone having a negligible population. The loss of pastureland was thought to be the cause for the decline in the south (Graber and Graber 1963).

**Breeding Bird Survey Trends**

Trend estimates indicate the populations increased in both Illinois and the upper Midwest region over the 1966–2000 period; the annual rates are 7.6 (significant,  $P = 0.01$ ) and 2.2% (significant,  $P = 0.01$ ), respectively. Kestrels are found on many BBS routes in the state and the region, even though raptors as a group are generally underrepresented in the BBS. *Credibility Index:*  $IL = 2$  and  $UM = 2$ .

**Distribution**

The American Kestrel, the smallest falcon that occurs in Illinois, was widely distributed in the state during the atlas project. It was reported in priority blocks in 97 counties. Kestrels were more often reported in priority blocks in the northeast, with decreasing frequency southward. In addition to the breeding population, there are distinct wintering and migratory populations; the interrelationship of these populations is not yet known.

**Frequency**

The American Kestrel was reported from 634 (63.5%) priority blocks and 126 nonpriority blocks. It was Confirmed as breeding in 246 of the priority blocks, most frequently by observation of fledged young (143 FL records). The kestrel is a fairly conspicuous bird and would most likely have been seen by atlasers had it been present. The lack of observations in the southwestern counties cannot be readily explained.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	246	24.6	38.8	300	23.3
Probable	159	15.9	25.1	193	15.0
Possible	229	22.9	36.1	267	20.8
Totals	634	63.5	100.0	760	59.1

\* 998 priority blocks

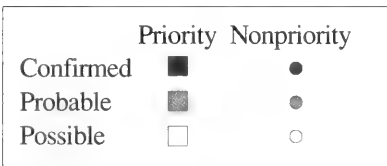
\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

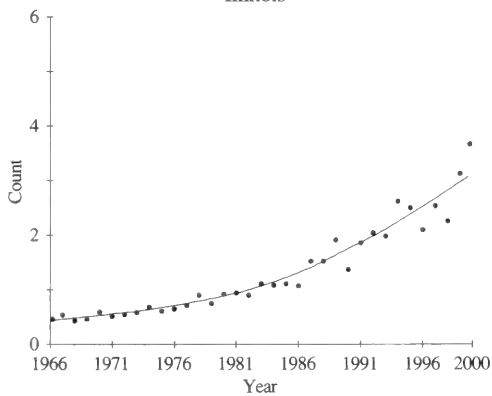


% of priority blocks with records for this species

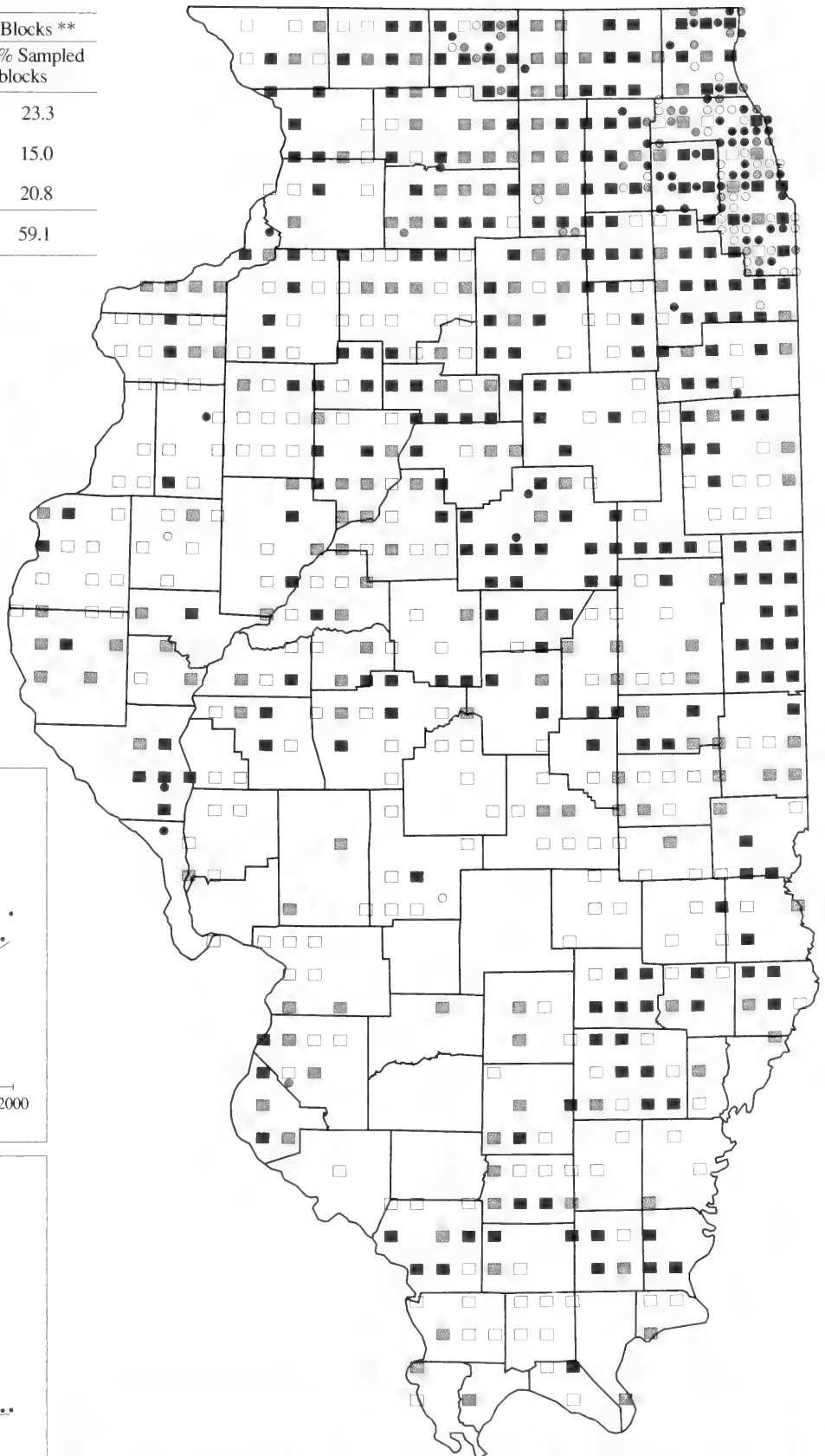
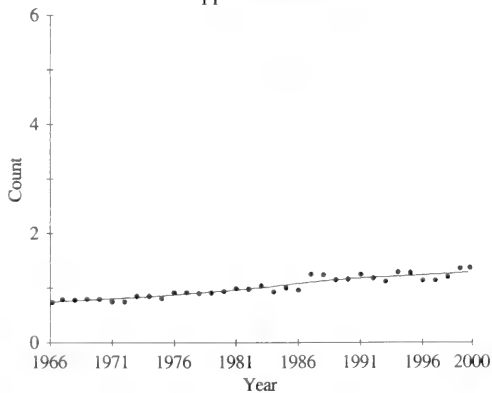


## Breeding Bird Survey Trends

Illinois



Upper Midwest



**American Kestrel**



# Peregrine Falcon

# *Falco peregrinus*



Eric Walters

**Code: PEFA**

**Rangewide Distribution:** cosmopolitan; all of North America from northern Alaska and Canada south through most of South America.

**ILLINOIS**

**Abundance:** uncommon migrant, very local summer resident (reintroduced), rare winter resident.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** formerly cliffs, now ledges on buildings or under bridges.

**Nest:** a scrape with accumulated debris, on a ledge.

**Eggs:** 3–4, white to pinkish cream, occasionally marked with browns or reds.

**Incubation:** 29–32 days.

**Fledging:** from 32 to 42 days.

U.S. in 1972 and the release of captive-bred birds, Peregrines reoccupied most of their historical range in North America by 1996, although distribution is somewhat spotty (White et al. 2002). The American Peregrine Falcon, which had been listed by the U.S. Fish and Wildlife Service as an endangered species in 1970, was removed from the endangered species list in 1999. Peregrines now also inhabit urban areas, having adapted to tall buildings and bridges in lieu of cliffs and bluffs for nest sites.

**Illinois History**

Historically, the Peregrine Falcon once nested locally throughout Illinois and was considered a rare summer resident in the northern part of the state (Nelson 1876). Toward the end of the nineteenth century, the species was reported as nesting in cavities of sycamore trees in Wabash County (Ridgway 1889) and along the Mississippi River in Jersey and Jackson counties (Widmann 1907). Until recently, the last known nest in Illinois occurred at Hickory Ridge in Jackson County in 1950 and 1951 (George 1968). As part of the Eastern Peregrine Falcon recovery effort, 46 young birds were released from hack sites in the Chicago area from 1986 through 1991. One to five pairs of Peregrines successfully nested in the Chicago area each year from 1987 to 1999. In 2000, 8 nesting pairs fledged 14 young and in 2001, 10 pairs fledged 19 young (Mary Hennen, pers. comm.). The Peregrine Falcon is currently listed as an endangered species in Illinois.

**Breeding Bird Survey Trends**

Peregrine Falcon numbers are so low that the BBS data are insufficient to estimate trends.

*Credibility Index: IL = none and UM = none.*

**Distribution**

The current distribution of nesting Peregrine Falcons is limited to the greater Chicago area and the Mississippi River near St. Louis. Nesting attempts have also been reported in Springfield, the Quad Cities, Peoria, and the St. Louis area.

**Frequency**

The Peregrine Falcon was not reported from any priority blocks, but was found in three nonpriority blocks in the Chicago area. Breeding was Confirmed in one of the nonpriority blocks. Every known nest throughout the Midwest has been fully monitored since the initiation of the reintroduction project. It is expected that detailed records will continue to be maintained for all nests for several more years.

Peregrine Falcons, known as the world's fastest-flying birds, breed nearly worldwide and occur from the tundra to the tropics in a wide variety of habitats, including wetlands, deserts, and forests. Historically, Peregrines nested on cliffs and bluffs adjacent to open country along rivers, lakes, and coastlines, where they hunted for prey, mainly birds. Peregrine Falcons were nearly extirpated as a breeding species in North America. The population crash drew national attention beginning in the 1960s. Although several factors were involved, the widespread use of DDT as a pesticide and its effect on reproductive success was determined to be the most likely cause of their near demise (Anderson and Hickey 1972). During the late 1980s and early 1990s, an organized effort was begun to reestablish a population in the eastern U.S. through release programs. Due to the ban on DDT in the

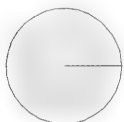


## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	0	0.0	0.0	1	0.1
Probable	0	0.0	0.0	1	0.1
Possible	0	0.0	0.0	1	0.1
Totals	0	0.0	100.0	3	0.2

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Peregrine Falcon**



Joe Milosevich

**Code: KIRA**

**Rangewide Distribution:** eastern U.S., south to Mexico and Cuba.

**ILLINOIS**

**Abundance:** rare migrant and (local) summer resident.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** shallow water or wet areas with grassy vegetation.

**Nest:** a deep basket of dry aquatic vegetation, on hummock above water level, concealed under a canopy.

**Eggs:** 10–12, buff, spotted with browns.

**Incubation:** 21–24 days.

**Fledging:** about 63 days.

The King Rail is a widely distributed breeding species in the eastern U.S. Like most rails it is extremely secretive, staying hidden in dense cover in marshy environments. This species prefers wetlands with a thick growth of herbaceous, emergent vegetation, such as cattails, bulrushes, and sedges, surrounded by large grasslands. Nests are usually placed along the edge of a marsh in clumps of vegetation. A substantial population decline has occurred throughout its range in the past century due mainly to loss of wetlands

(Meanly 1992). The survival of this species is dependent on the preservation and protection of existing marshes and creation and restoration of additional habitat.

**Illinois History**

The King Rail, which is the largest rail that occurs in Illinois, was considered a common summer resident in suitable habitat throughout the state during the latter part of the nineteenth century (Ridgway 1895; Cory 1909). It was still considered common in the Chicago area through the early decades of the twentieth century (Ford 1956). Because of its dependence on marshes, the population has declined as a result of the drastic loss of wetlands. In recent years the species has been reported only sporadically by dedicated field observers. Loss and deterioration of wetland habitat and a greatly reduced population level were reasons for the King Rail to be listed as a threatened species in Illinois in 1994 and reclassified as an endangered species in 1999.

**Breeding Bird Survey Trends**

No BBS trend estimates are available for this rare and secretive species.

*Credibility Index: IL = none and UM = none.*

**Distribution**

The King Rail was reported in priority blocks in seven widely scattered counties during the atlas project. Prior to the atlas project, records were known from extreme southern Illinois and the marshy habitats along the Illinois River and in northern counties. Confirmed breeding occurred only in Cook and Will counties during the atlas project. Since the atlas, the King Rail has become a regular breeding species in newly created wetlands in the Prairie Ridge State Natural Area in Jasper County.

**Frequency**

The King Rail was reported from eight (0.8%) priority blocks and an additional three nonpriority blocks. Breeding was Confirmed in three (0.3%) of the priority blocks (two in Will County and one in Cook County) and one nonpriority block (Will County).

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	3	0.3	37.5	4	0.3
Probable	1	0.1	12.5	1	0.1
Possible	4	0.4	50.0	6	0.5
Totals	8	0.8	100.0	11	0.9

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

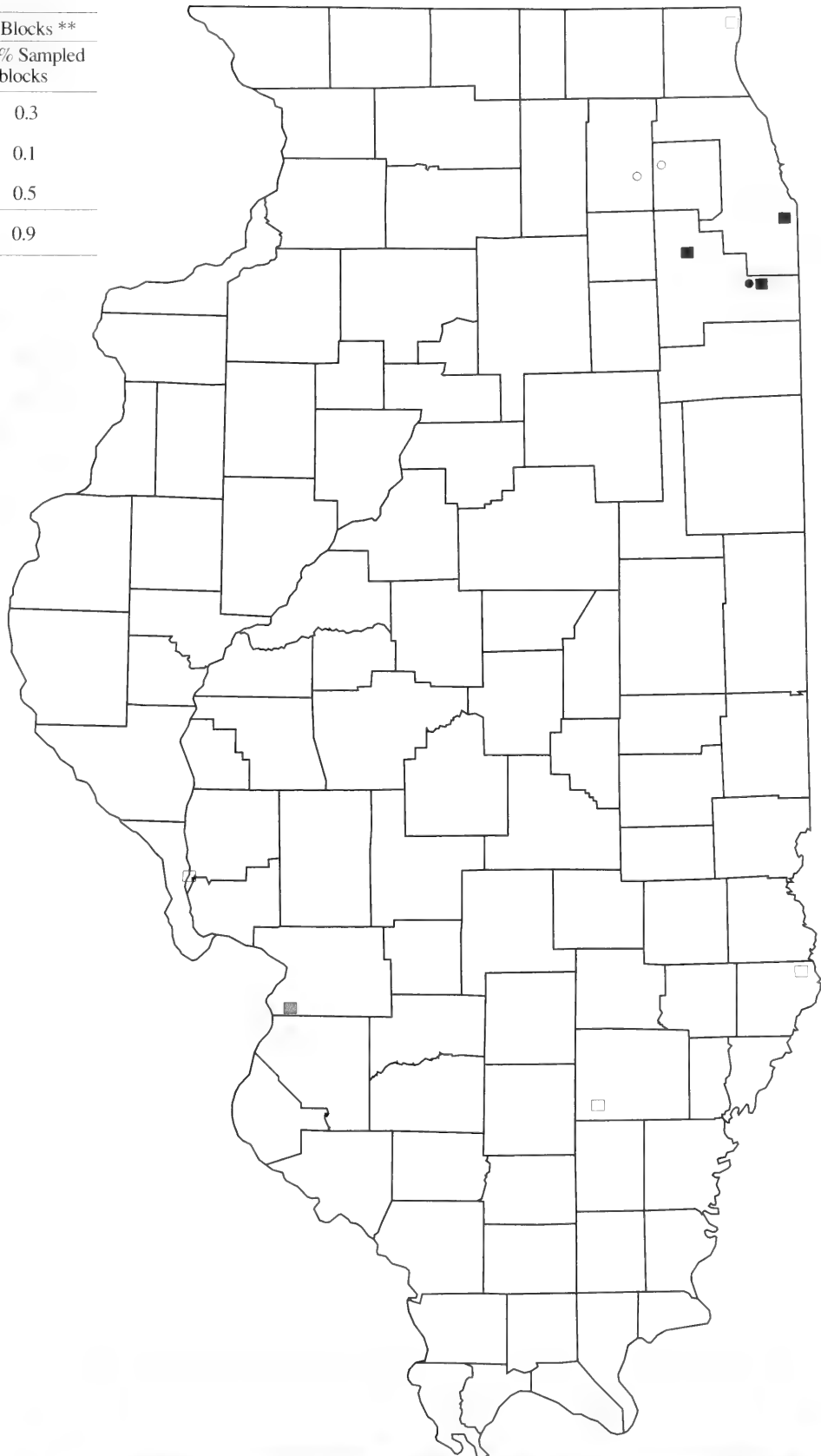


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○





Robert Randall

**Code: VIRA**

**Rangewide Distribution:** southern Canada to southern South America.

**ILLINOIS**

**Abundance:** fairly common migrant, rare to uncommon summer resident, decreasing southward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** shallow emergent wetlands usually with cattails, sedge, or bulrush.

**Nest:** a saucerlike structure of coarse aquatic vegetation and grass, in tussock or clumped vegetation.

**Eggs:** 7–12, off-white to buff, with brown spots.

**Incubation:** 18–20 days.

**Fledging:** about 25 days.

The Virginia Rail is limited to isolated wetland areas in its range. Its current North American breeding range is generally southern Canada and the northern and western U.S. It is similar in appearance to the King Rail but is smaller and has distinctly gray cheeks. This species inhabits marshes, staying concealed in the emergent vegetation; it is more often heard than seen. The Virginia Rail uses its long, curved bill to probe for aquatic insects and small fish. Virginia Rails nest in dense vegetation near the edge of marshes. The nest, a cup of vegetation, is placed on a mound of vegetation a few inches

above water. Throughout much of its range, including Illinois, the Virginia Rail is a game species, although it is rarely sought or taken by hunters. Wetland loss and degradation have caused population declines. Like most wetland species, Virginia Rail populations are dependent on the preservation, protection, management, and restoration of wetlands.

**Illinois History**

Although early accounts of the Virginia Rail parallel those of the King Rail, that is, a common summer resident in Illinois especially in the north (Ridgway 1895; Cory 1909; Ford 1956), there were never many records of nests or young. With the quantity and quality of wetland habitat now greatly reduced, it is a fair presumption that the population is also much reduced. A population still exists in northeastern Illinois, according to data acquired immediately before and after the atlas project (Stricker and Paine 1996a), and recent positive evidence of nesting has occurred as far south as Macon and Sangamon counties (Bohlen 1989).

**Breeding Bird Survey Trends**

Due to its secretive nature and low numbers, the Virginia Rail is not adequately sampled by the BBS. The trend estimate for the upper Midwest is  $-2.5\%$  per year (nonsignificant,  $P = 0.26$ ) for 1966–2000.

**Credibility Index:**  $IL = \text{none}$  and  $UM = 3$ .

**Distribution**

Virginia Rails were found almost exclusively in the wetlands in northeastern Illinois during the atlas project. Like the King Rail, the species may occur in suitable wetlands in other parts of the state. Using a specially designed playback technique, Stricker and Paine (1996a) proved they occurred at several wetland sites in 1995 and 1996.

**Frequency**

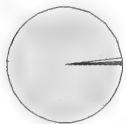
The Virginia Rail was reported from 19 (1.9%) of the priority blocks and another 30 nonpriority blocks. Breeding was Confirmed in 3 (0.3%) of the priority blocks (in Will and southern Cook counties) as well as 5 nonpriority blocks (in Lake, DuPage, Cook, and Will counties). It is possible that Virginia Rails bred in many of the blocks in which they were reported and could occur in other wetlands as well.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	3	0.3	15.8	8	0.6
Probable	7	0.7	36.8	18	1.4
Possible	9	0.9	47.4	23	1.8
Totals	19	1.9	100.0	49	3.8

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

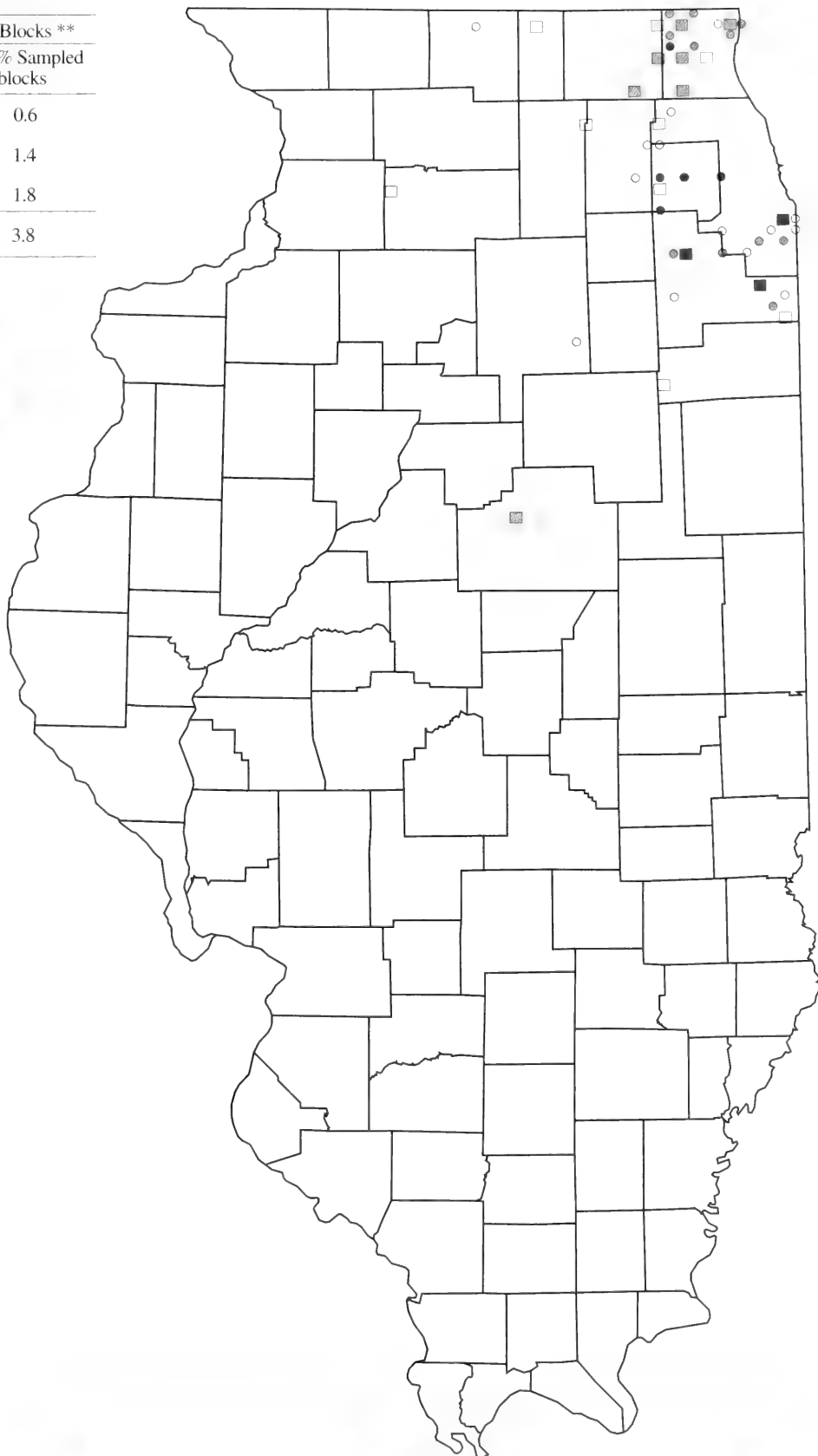


% of 998 sampled priority blocks (gray = no records for this species)

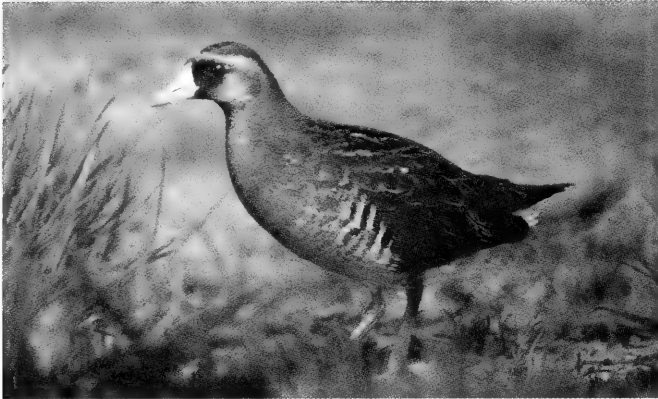


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Virginia Rail**



Kanae Hirabayashi

**Code: SORA**

**Rangewide Distribution:** southern half of Canada, south through much of the U.S. to northern South America.

**ILLINOIS**

**Abundance:** common migrant, uncommon summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** shallow emergent wetlands and wet meadows.

**Nest:** basket of dead aquatic vegetation lined with finer materials, up to 6 inches above water.

**Eggs:** 10–12, brown and buff, marked with brown.

**Incubation:** 18–20 days.

**Fledging:** from 21 to 25 days.

The Sora is one of the most abundant and widely distributed North American rails. It generally breeds in the southern half of Canada and northern and western U.S. The Sora is a secretive bird of wet and marshy environments that spends most of its time in dense vegetation on the edge of marshes. It often coexists in the same wetlands with Virginia Rails. Soras tend to wander out into the open and are therefore seen more often than other rail species. Its loud, descending whinny is distinctive and easily imitated. Although the Sora does eat invertebrates, its preferred food is seeds from wetland plants. Nests are placed over shallow water on a mound of plant matter at the edge of vegetation in marshes.

In many states, including Illinois, the Sora is a game species but is rarely sought or taken by hunters. In the past century breeding has become localized due to wetland loss and degradation. Like other rail species, Soras are dependent on the preservation, protection, proper management, and restoration of emergent wetlands, which are required for migration, breeding, and wintering.

**Illinois History**

Ridgway (1895) described the Sora as an “exceedingly abundant summer resident in all marshy situations” and Cory (1909) stated that it was an abundant summer resident in Illinois. The species was still fairly common during the early 1900s, as evidenced by the fact that 54 nests were found in a single Lake County marsh in 1937 (Beecher 1942). Although still a regular nesting species in the northern half of the state, it is no longer an abundant summer resident because of the loss and disturbance of much of its breeding habitat.

**Breeding Bird Survey Trends**

Because of low numbers, the BBS data are insufficient to estimate trends for Illinois. For 1966–2000 the trend estimate is  $-1.3\%$  per year (nonsignificant,  $P = 0.53$ ) for the upper Midwest.

*Credibility Index: IL = none and UM = 2.*

**Distribution**

The Sora was most frequently encountered in the state’s northeastern wetlands during the atlas project. The records in southern Illinois (White and Hamilton counties) were unexpected and perhaps represented an unknown breeding area or may have been migrants; those populations have not been relocated since the atlas project ended. Atlas data are not adequate to accurately assess the true distribution of this species. Like the other rails, the Sora may occur in appropriate permanent or temporary wetlands throughout the state. Stricker and Paine (1996b) describe monitoring protocols that would assist in the further assessment of the status of this species.

**Frequency**

The Sora was reported from 37 (3.7%) of the priority blocks and another 43 nonpriority blocks. Breeding was Confirmed in 7 (0.7%) of the priority blocks—6 in Lake and McHenry counties and 1 in Brown County. It is possible that Soras bred in several of the other priority blocks as well.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	7	0.7	18.9	15	1.2
Probable	10	1.0	27.0	27	2.1
Possible	20	2.0	54.1	38	3.0
Totals	37	3.7	100.0	80	6.2

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Sora**



Joe Milosevich

## Code: COMO

**Rangewide Distribution:** Europe; Asia; Africa; eastern and southwestern U.S., south through most of South America.

## ILLINOIS

**Abundance:** uncommon migrant, rare (local) to uncommon summer resident, decreasing southward.

**Endangered/Threatened Status:** threatened.

**Breeding Habitat:** quiet marshes with emergent vegetation, especially cattails and bulrushes.

**Nest:** a shallow platform of bleached aquatic plants lined with grass, usually over water with a ramp leading down to the water.

**Eggs:** 5–8, cinnamon to buff, marked with reddish brown or olive.

**Incubation:** 19–22 days.

**Fledging:** from 40 to 50 or more days.

This rail breeds throughout the eastern U.S. and locally in the West, and in Mexico. It is uncommon over much of its range and its population appears to be declining (Jackson et al. 1996). The Common Moorhen, formerly known as Florida Gallinule and more recently as the Common Gallinule, is a close relative of the American Coot. It is a quiet, skittish bird that prefers permanent marshes with thick, emergent vegetation, such as cattails, bulrushes, and willows, in water about 1 to 3 feet deep. Like many marsh birds, Common Moorhens are more often heard than seen. They

feed mainly on plant material and seeds of aquatic plants as well as a variety of invertebrates. Nests are usually placed over water on a mound of vegetation within stands of emergent vegetation with nearby open water. The availability of marshes with emergent vegetation interspersed with open water is an important factor in the survival of this species. Management techniques, such as prescribed burns that keep portions of the marsh open and controlling water levels, may benefit this species.

## Illinois History

In the 1800s the Common Moorhen was a common summer resident in marshes and large prairie sloughs throughout the state (Nelson 1876; Ridgway 1895; Cory 1909). It was still common in the Chicago region during the first half of the twentieth century (Ford 1956). As wetlands were filled or drained, the population of Common Moorhens declined and it is no longer the common and widely distributed species it was even 50 years ago. Because it is currently so uncommon and its required habitat is imperiled, the Common Moorhen is listed as a threatened species in Illinois.

## Breeding Bird Survey Trends

This species is not adequately sampled by the BBS and trend estimates are not available for Illinois. The trend estimate for the upper Midwest for 1966–2000 is –4.2% per year (nonsignificant,  $P = 0.51$ ).

**Credibility Index:**  $IL = \text{none}$  and  $UM = 3$ .

## Distribution

During the atlas project, the Common Moorhen was found primarily in northeastern Illinois. Although nesting and other observations did occur elsewhere, they were sporadic and incidental, perhaps a result of appropriate habitat being temporarily available in wet years. The Common Moorhen occurs regularly as a breeding or summer resident in the Horseshoe Lake area of Madison County.

## Frequency

The Common Moorhen was reported from 11 (1.1%) priority blocks and 23 nonpriority blocks. Breeding was Confirmed in 6 (0.6%) of the priority blocks (5 in northeastern Illinois and 1 in Madison County). It was also Confirmed in 17 nonpriority blocks (16 in the northeastern counties and 1 in Coles County).



## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	6	0.6	54.5	23	1.8
Probable	0	0.0	0.0	3	0.2
Possible	5	0.5	45.5	8	0.6
Totals	11	1.1	100.0	34	2.6

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

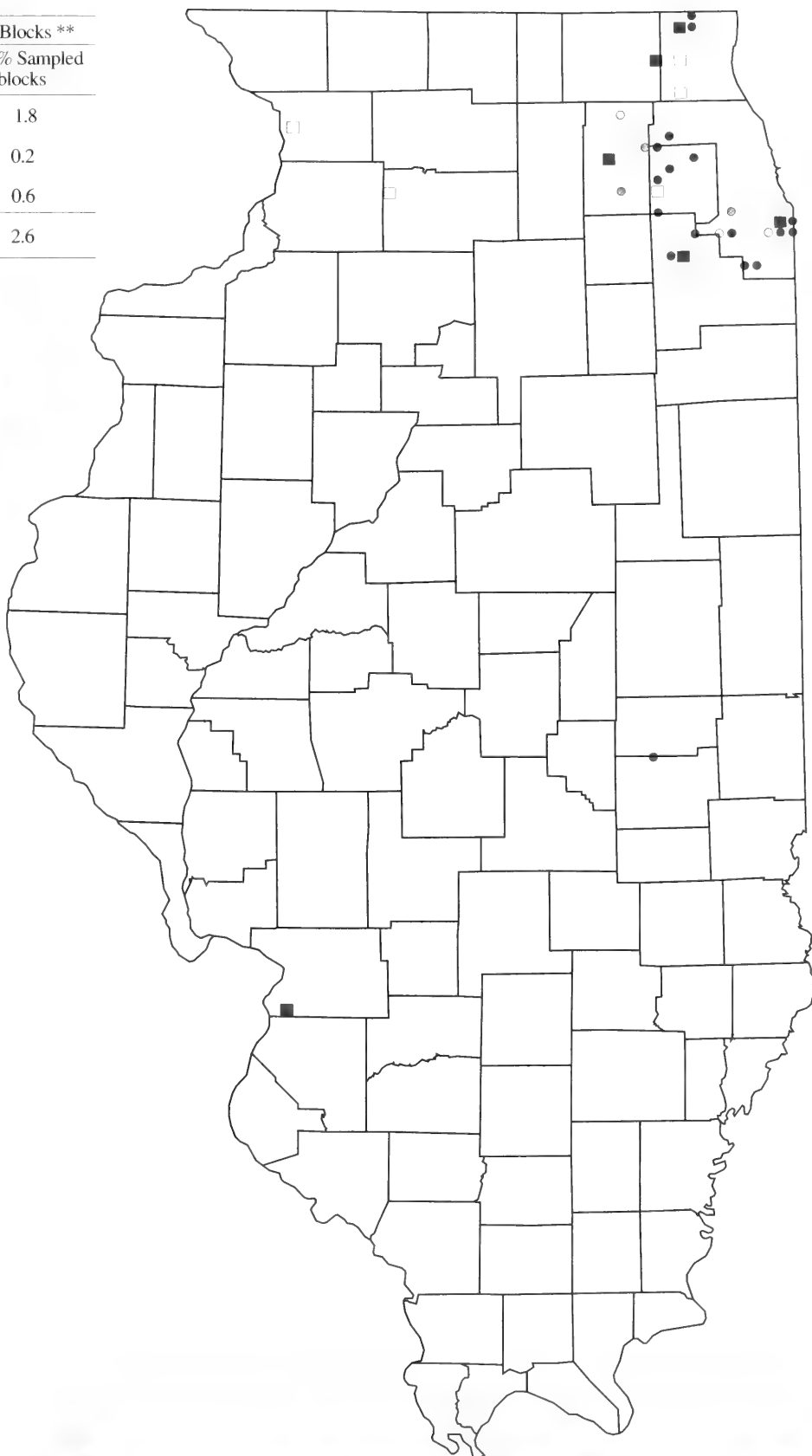


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed		
Probable		
Possible		



**Common Moorhen**



Eric Walters

**Code: AMCO**

**Rangewide Distribution:** southwestern Canada, south through most of the U.S. to central South America.

**ILLINOIS**

**Abundance:** common migrant and fairly common summer resident, decreasing southward; and uncommon winter resident, decreasing northward.

**Endangered/Threatened Status:** none

**Breeding Habitat:** open deepwater ponds, lakes, and marshes with emergent vegetation on the periphery.

**Nest:** a large floating platform of dead stems and finer materials anchored to the vegetation.

**Eggs:** 8–12, pinkish to buff, marked with blacks or browns.

**Incubation:** 21–25 days.

**Fledging:** from 49 to 56 or more days.

The American Coot, sometimes called the mud hen, is widely distributed in central and western North America and a common breeding species in the prairie pothole region of central North America. It is a conspicuous and gregarious species. Coots, which are considered a game bird, are often mistaken for ducks, but are actually members of the rail family. Like other rails, coots are associated with marshes, but they spend more time in open water than other rail species. They can be found alone or in large flocks, in water or on land close to water, and in shallow ponds or large bodies of water. The coot's diet consists chiefly of aquatic vegetation. Nests are built on the ground, concealed in emergent vegetation near water. Its presence is often re-

vealed by its distinctive vocalizations. The significant decline in abundance and distribution that has occurred since the early 1900s is likely a result of loss of wetlands and overhunting (Brisbin et al. 2002).

**Illinois History**

In the 1800s the American Coot was “an exceedingly abundant summer resident in the more northern portions of the state” (Ridgway 1895) and “far from rare in any marsh situation” (Nelson 1876). It continued to be common in the Chicago region during the early decades of the twentieth century (Ford 1956). Historically the large numbers of coots found at Grass Lake in Lake and McHenry counties attracted hunters; in 1942 the harvest of coots was estimated at 23,800 birds, which was about 90% of the coots found on the lake (Havera 1999). American Coots continue to be a game species in Illinois, but are no longer harvested in large numbers (Havera 1999). The extensive loss of wetland habitat since the mid-nineteenth century has presumably reduced the number of coots nesting in Illinois. American Coots continue to be fairly common in the northeastern wetlands; they breed sporadically and opportunistically, primarily during wet years, in the rest of the state.

**Breeding Bird Survey Trends**

This species is not adequately sampled by BBS and there is insufficient BBS data to estimate trends for Illinois. For the upper Midwest the BBS data indicate a decline of –5.9% annually (significant,  $P < 0.01$ ) from 1966 to 2000.

*Credibility Index:* IL = none and UM = 2.

**Distribution**

American Coots nested or attempted to nest at scattered locations throughout the state during the atlas project. The greatest number of priority blocks with breeding evidence was in the north and decreased southward. There were records of coots in priority blocks in 23 counties during the atlas project.

**Frequency**

The American Coot was reported from 32 (3.2%) priority blocks and 42 nonpriority blocks. Breeding was Confirmed in 15 (1.5%) of the priority blocks, most frequently by the observation of broods (10 FL records). Because of the difficulty in finding Confirmed breeding evidence in marsh habitats, it is possible that coots nested in several of the blocks in which they were recorded as Probable and Possible breeders.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	15	1.5	46.9	39	3.0
Probable	3	0.3	9.4	4	0.3
Possible	14	1.4	43.8	31	2.4
Totals	32	3.2	100.0	74	5.8

\* 998 priority blocks

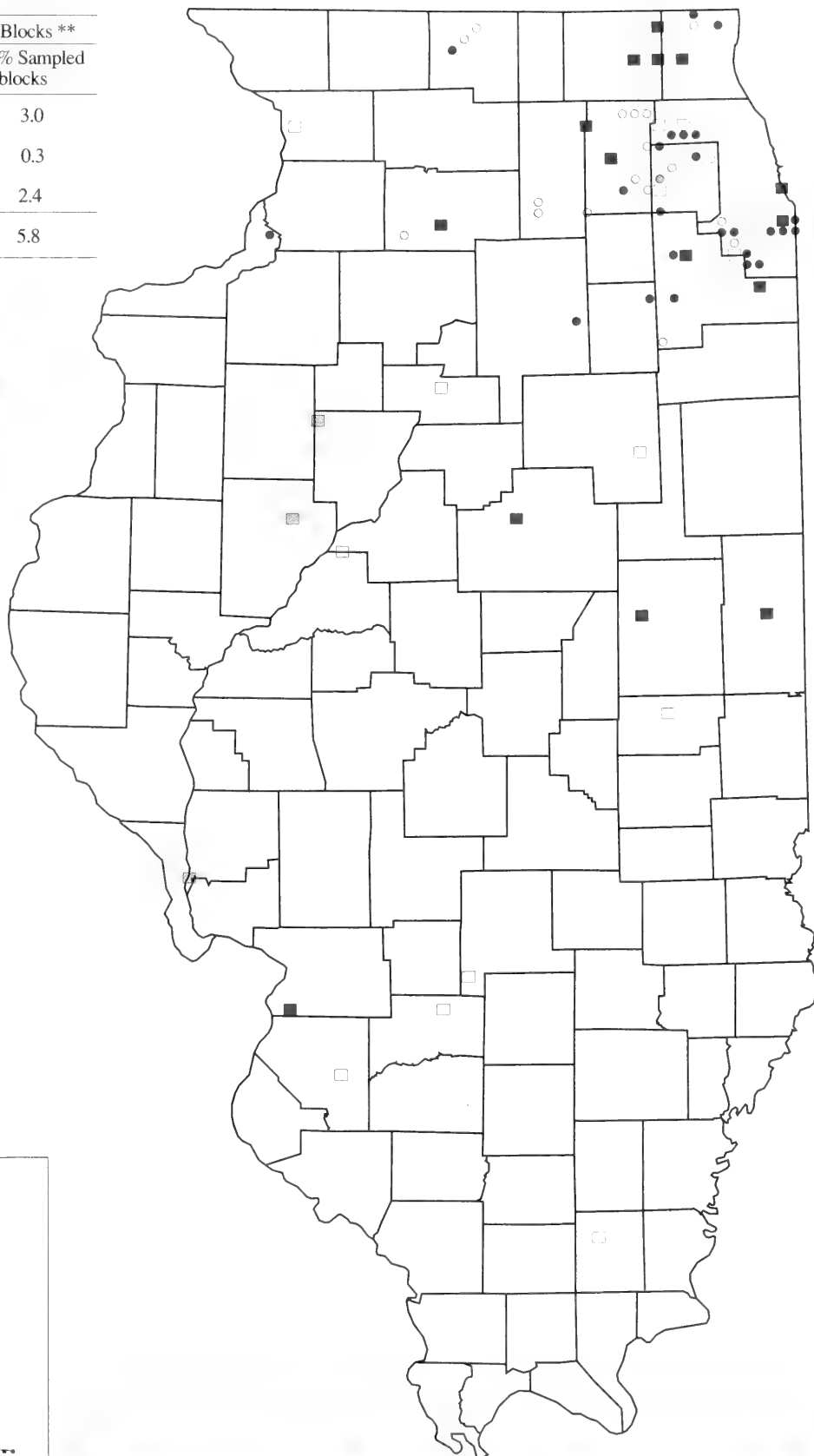
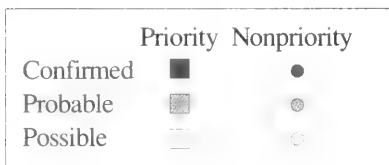
\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

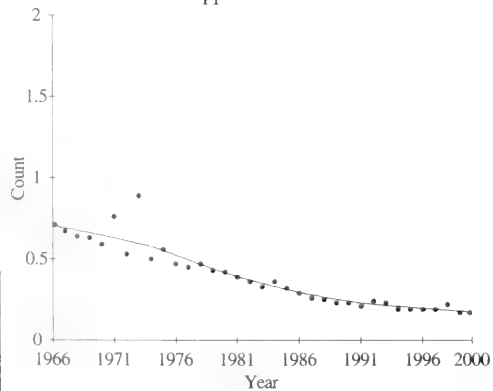


% of priority blocks with records for this species



## Breeding Bird Survey Trends

Upper Midwest



**American Coot**



Annalee Fjellberg

**Code:** SACR

**Rangewide Distribution:** Siberia, Alaska, and northern Canada, to northern Mexico.

**ILLINOIS**

**Abundance:** common migrant and uncommon summer resident in northeast; rare elsewhere.

**Endangered/Threatened Status:** threatened

**Breeding Habitat:** large, undisturbed freshwater marshes and prairie ponds.

**Nest:** a large mound of grass or uprooted plants, on ground or in shallow water.

**Eggs:** 2, buff to olive, marked with browns.

**Incubation:** 28–32 days.

**Fledging:** about 65 days.

The large, heronlike Sandhill Crane breeds at scattered locations across North America. Flocks often concentrate at migratory staging areas such as the Platte River in Nebraska. In recent years their breeding range has expanded and Sandhill Cranes have returned to many areas, including Illinois, where they had not nested in over a century. This species inhabits and nests in marshes and wet meadows, and feeds in wetlands and agricultural fields. It feeds on seeds, insects, and other invertebrates. Habitat availability is the most important conservation need for this species and protection, preservation, and management of wetland

habitats on the breeding grounds, migratory staging areas, and wintering grounds are critical (Tacha et al. 1992).

**Illinois History**

Once abundant on all large marshes (Kennicott 1855), the Sandhill Crane had all but disappeared as a breeding species in Illinois by 1876 (Nelson 1876; Ridgway 1895). The last known nest in Illinois was found in Champaign County in 1872 (Gault 1922). Although birds migrated year after year over the Chicago area from their staging area at Jasper-Pulaski Fish and Wildlife Area in Indiana en route to their more northern breeding areas, none stayed to breed in Illinois. In 1979 Greenberg (1980) found a pair of Sandhill Cranes just south of the Wisconsin line that successfully raised two young. Since then, Sandhill Cranes have continued to spread as a nesting species and now nest successfully in several northeastern Illinois counties. Because of the vulnerability of its small population, the Sandhill Crane was listed as endangered in 1989 but was upgraded to threatened in 1999 because of its successful reestablishment as a breeding species in the state.

**Breeding Bird Survey Trends**

This species is increasing in Illinois but is still too localized to be adequately sampled by the BBS. The upper Midwest population experienced an increase from 1966 to 2000 estimated at 11.5% per year (significant,  $P < 0.01$ ).

**Credibility Index:** IL = none and UM = 1.

**Distribution**

Prior to the atlas project, the Sandhill Crane had only recently returned to Illinois as a breeding species. Its distribution was limited to a few blocks in the northeastern part of the state during the atlas project, but since then the population has continued to expand into suitable habitat in seven counties. In 2001 the nesting population had increased to at least 10 Confirmed and 5 Possible nesting sites in the northeastern counties. Sandhill Cranes nest yearly along the Mississippi River in Carroll and likely in Jo Daviess counties as well (Kleen 2002a; S. Bailey, pers. comm.).

**Frequency**

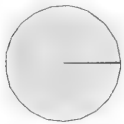
Sandhill Cranes were reported from two (0.2%) priority blocks and nine nonpriority blocks. Breeding was Confirmed in one priority block and five nonpriority blocks. All confirmations were in Lake, McHenry, and Kane counties.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	50.0	6	0.5
Probable	0	0.0	0.0	4	0.3
Possible	1	0.1	50.0	1	0.1
Totals	2	0.2	100.0	11	0.9

\* 998 priority blocks

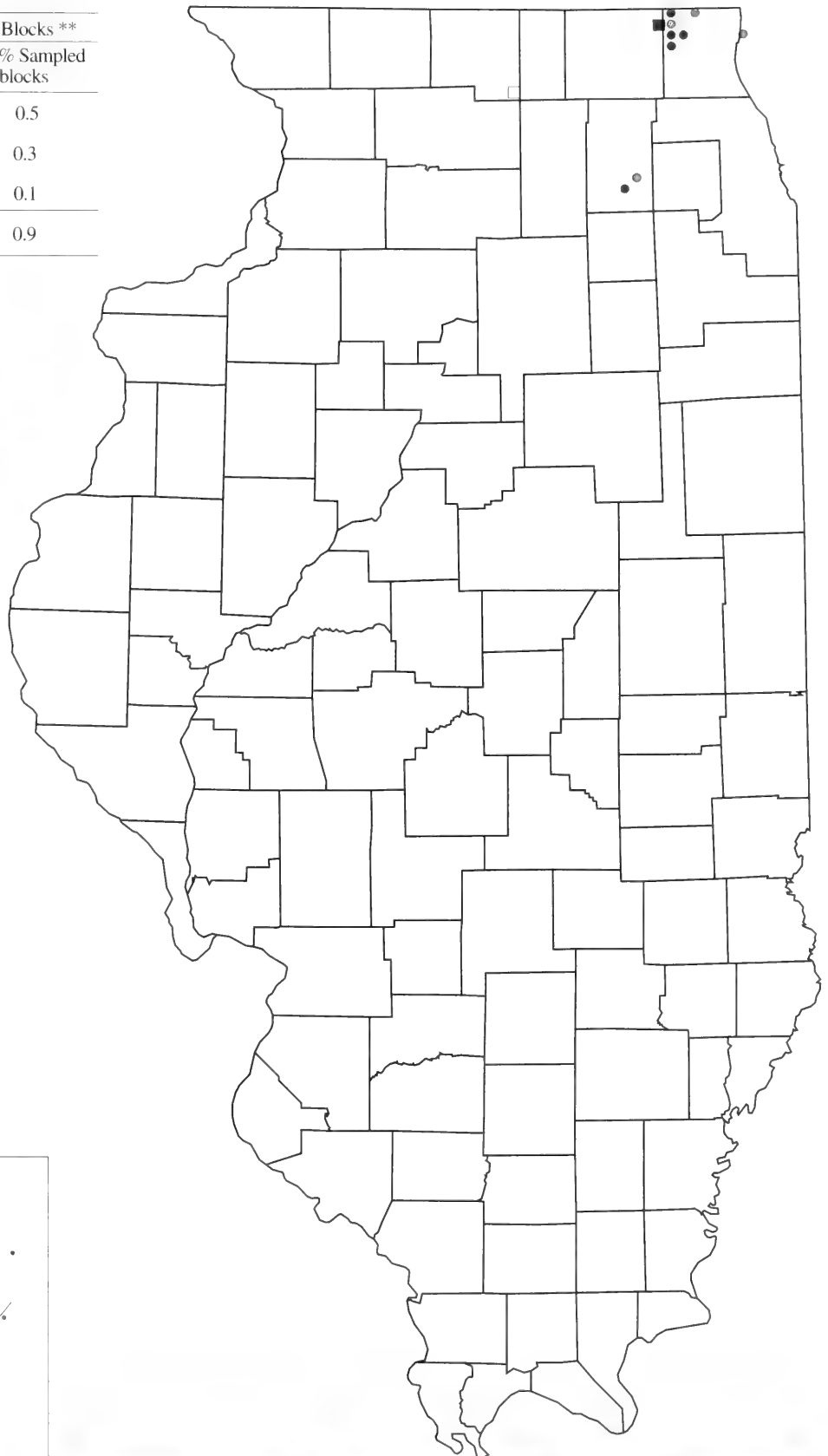
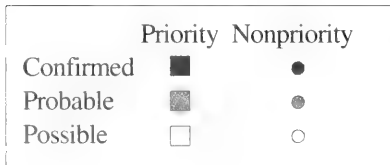
\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

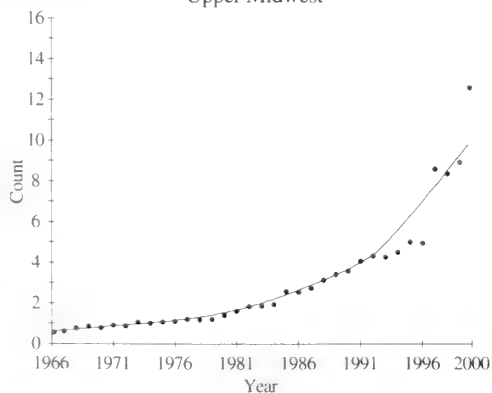


% of priority blocks with records for this species



## Breeding Bird Survey Trends

### Upper Midwest



**Sandhill Crane**



Annalee Fjellberg

**Code:** KILL

**Rangewide Distribution:** Alaska and the lower half of Canada, south through all of the U.S. to northwestern South America.

**ILLINOIS**

**Abundance:** abundant migrant, common summer resident, uncommon winter resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** fields, meadows, pastures, and other open areas.

**Nest:** a scrape on ground, often in driveways and parking lots.

**Eggs:** 4, buff-colored, with brown or black marks.

**Incubation:** 24–28 days.

**Fledging:** about 25 days.

The Killdeer is the most widely distributed shorebird in North America and a common to abundant breeding species across the southern half of Canada, all of the U.S., and Mexico. Killdeer often arrive on their breeding grounds early in the spring (February in Illinois) and sometimes must contend with late-spring snowstorms. They are most often found in bare open areas and short vegetation, at least during the breeding season. The Killdeer is a native species that has adapted well to environmental changes, and now successfully nests on the ground in cropland, golf courses, airfields, gravel roads, parking lots, and on flat, gravel rooftops. At one time the population was in serious decline due in part to overhunting, but this species is probably more abundant now

than in the past because of its adaptive nature (Jackson and Jackson 2000). It is known for its loud call and broken wing act used to trick intruders, both man and potential predators, away from the nest and young.

**Illinois History**

During the late 1800s and early 1900s, the Killdeer was a common and well-known summer resident throughout the state (Ridgway 1895; Cory 1909) and continues to be so. Census data indicated increased densities in the north in 1957 compared to 1909 (Graber and Graber 1963). The number of Killdeer in the state varies from year to year, perhaps influenced by the effects of weather extremes on their relatively exposed nests during the April to June nesting season (Graber and Graber 1963).

**Breeding Bird Survey Trends**

BBS data show population increases during 1966–2000 and the two subintervals (1966–1979 and 1980–2000) in Illinois and the trend estimates are all significant. From 1966 to 2000 the Killdeer population in Illinois increased at an annual rate of 8.1% (significant,  $P < 0.01$ ). For the upper Midwest, trend estimates are also positive and significant for all three time periods and the data indicate an increase in population at a rate of 2.7% per year (significant,  $P < 0.01$ ) between 1966 and 2000.

*Credibility Index:* IL = 1 and UM = 2.

**Distribution**

During the atlas project, the Killdeer was a very common breeding species throughout the state and was reported from priority blocks in all 102 counties. It was one of the most frequently reported species from priority blocks during the atlas project (Table 4).

**Frequency**

The Killdeer was reported from 948 (95%) priority blocks and 160 nonpriority blocks. It was Confirmed as breeding in 594 (59.5%) of the priority blocks. The Killdeer was one of the easiest species to confirm; its presence could be detected by its “kill-deer, kill-deer” call and the presence of a nest or young by its distraction displays. The most frequently used evidence of Confirmed breeding in priority blocks was the observation of young (334 FL records) followed by distraction displays (173 DD records). Nests with eggs were more difficult to find (36 NE records). The Killdeer would have been Confirmed as a breeding species in many more priority blocks given more sampling time.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	594	59.5	62.7	692	53.8
Probable	207	20.7	21.8	241	18.7
Possible	147	14.7	15.5	175	13.6
Totals	948	95.0	100.0	1,108	86.2

\* 998 priority blocks

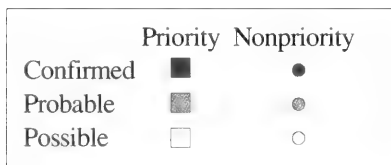
\*\* 1,286 total blocks (priority and nonpriority)



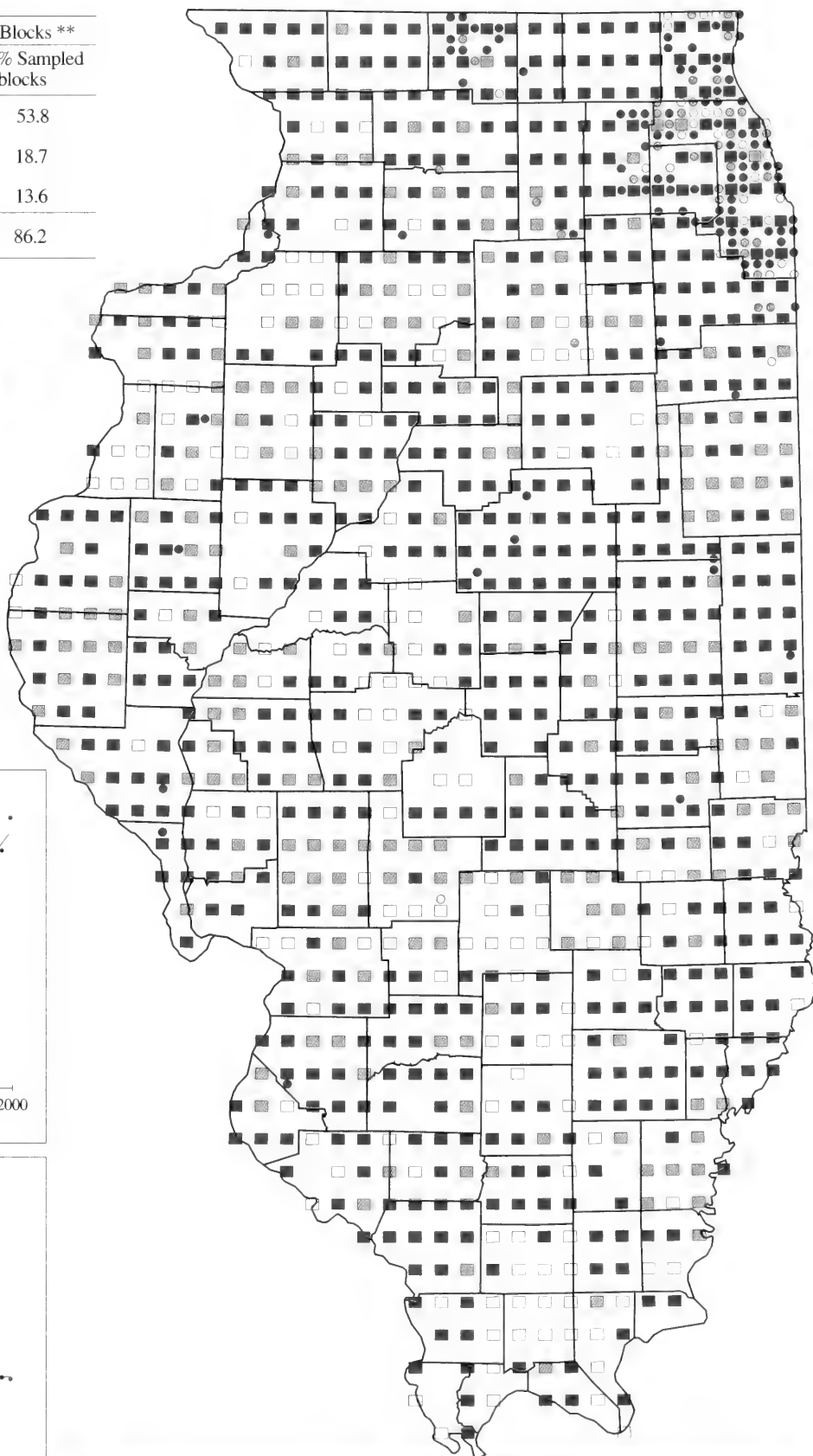
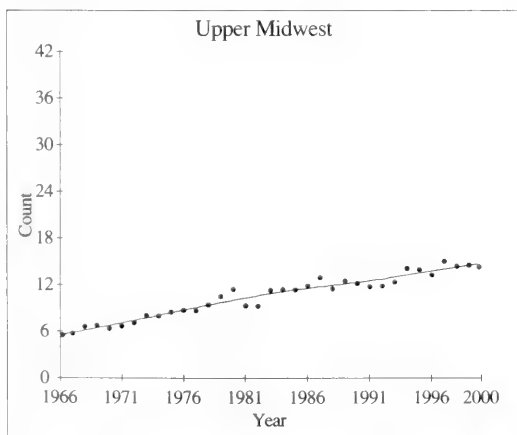
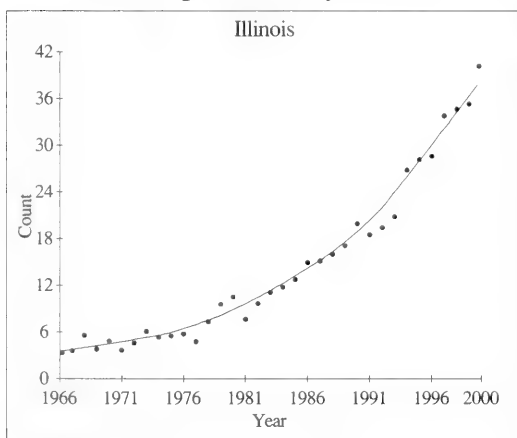
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends

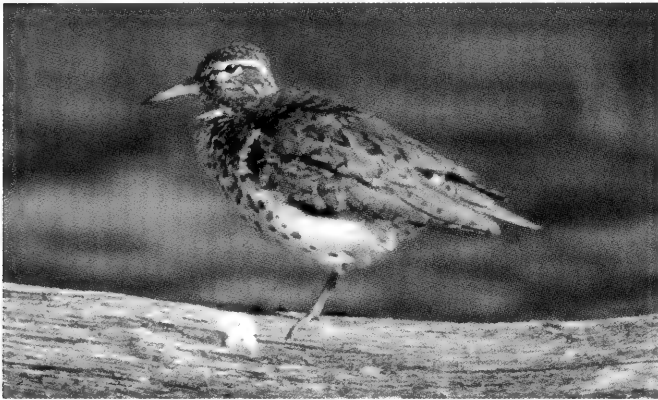


**Killdeer**



## Spotted Sandpiper

## *Actitis macularia*



Richard Day / Daybreak Imagery

### **Code:** SPSA

**Rangewide Distribution:** Alaska and northern Canada, south through the U.S. to southern South America.

### **ILLINOIS**

**Abundance:** common migrant, uncommon summer resident, decreasing southward.

**Endangered/Threatened Status:** none

**Breeding Habitat:** open or early successional areas near water, including pond and lake edges, reclaimed strip mine areas, and gravel pits.

**Nest:** a scrape with dry moss lined with grass, on ground.

**Eggs:** 4, brownish, greenish or pinkish buff, with dark brown marks.

**Incubation:** 20–24 days.

**Fledging:** from 17 to 21 days.

The Spotted Sandpiper, aptly named for its fully spotted breast during the breeding season, is widespread and generally common; it breeds throughout much of North America from northern Canada and Alaska to the northern boundary of the southern tier of states. Of the five shorebird species that regularly breed in Illinois (Spotted Sandpiper, Upland Sandpiper, Wilson's Snipe, American Woodcock, and Killdeer), only the Killdeer has a greater North American breeding range than the Spotted Sandpiper. It occurs in a variety of habitats near water, such as beaches, mudflats, rocky shores, streams, and rocks along causeways. A key identification feature of this sandpiper is that it flies or twitters with stiff wings low over the water surface. It teeters along the water's edge like other shorebird species. Spotted Sandpipers occur alone or in small loose groups. Nests are placed on the ground in a depression usually in herbaceous

vegetation or under low shrubs near a pond, lake, or stream. Like several other shorebird species, the Spotted Sandpiper has a polyandrous mating system, where the female acquires multiple mates, and the males do most of the incubation in several different nests. The number of available males is a primary factor limiting annual female reproductive effort (Oring et al. 1997).

### **Illinois History**

In the mid-1800s, the Spotted Sandpiper was a very common summer resident in Cook County (Nelson 1876). Toward the end of the 1800s it was "probably the most generally distributed species of the [sandpiper] family, since it is to be found along the banks of nearly every stream, large or small" (Ridgway 1895). During the 1900s, the species remained a common summer resident with more nesting occurring in northern and central parts of the state than in the south (Bohlen 1989).

### **Breeding Bird Survey Trends**

The Spotted Sandpiper is not adequately sampled by the BBS because of its low relative abundance in the state and the region. The trend for 1966–2000 for Illinois is estimated at 5.4% per year (nonsignificant,  $P = 0.70$ ) and for the upper Midwest population the trend is estimated at -2.3% per year (significant,  $P = 0.03$ ).

*Credibility Index:*  $IL = 3$  and  $UM = 3$ .

### **Distribution**

During the atlas project, the Spotted Sandpiper was reported most frequently in the northeastern counties where suitable wetlands are more abundant and there were more atlasers than in other areas of the state. This species was reported in priority blocks in 56 counties, decreasing in frequency from north to south. Bohlen (1989) noted that away from Lake Michigan the species is especially attracted to gravel pits and sewage lagoons. Because their habitat may have been inaccessible, the atlas data may underrepresent the true distribution of this species. While still common, the Spotted Sandpiper is probably not as common as it was a century ago.

### **Frequency**

The Spotted Sandpiper was reported from 150 (15.0%) priority blocks and another 80 nonpriority blocks. Breeding was Confirmed in 36 (3.6%) of the priority blocks, mostly by observation of fledged young (25 FL records). Confirmed records were concentrated in the northeastern counties. The Confirmation in southern Illinois was at the northern end of Carlyle Lake.



## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	36	3.6	24.0	62	4.8
Probable	42	4.2	28.0	67	5.2
Possible	72	7.2	48.0	101	7.9
Totals	150	15.0	100.0	230	17.9

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

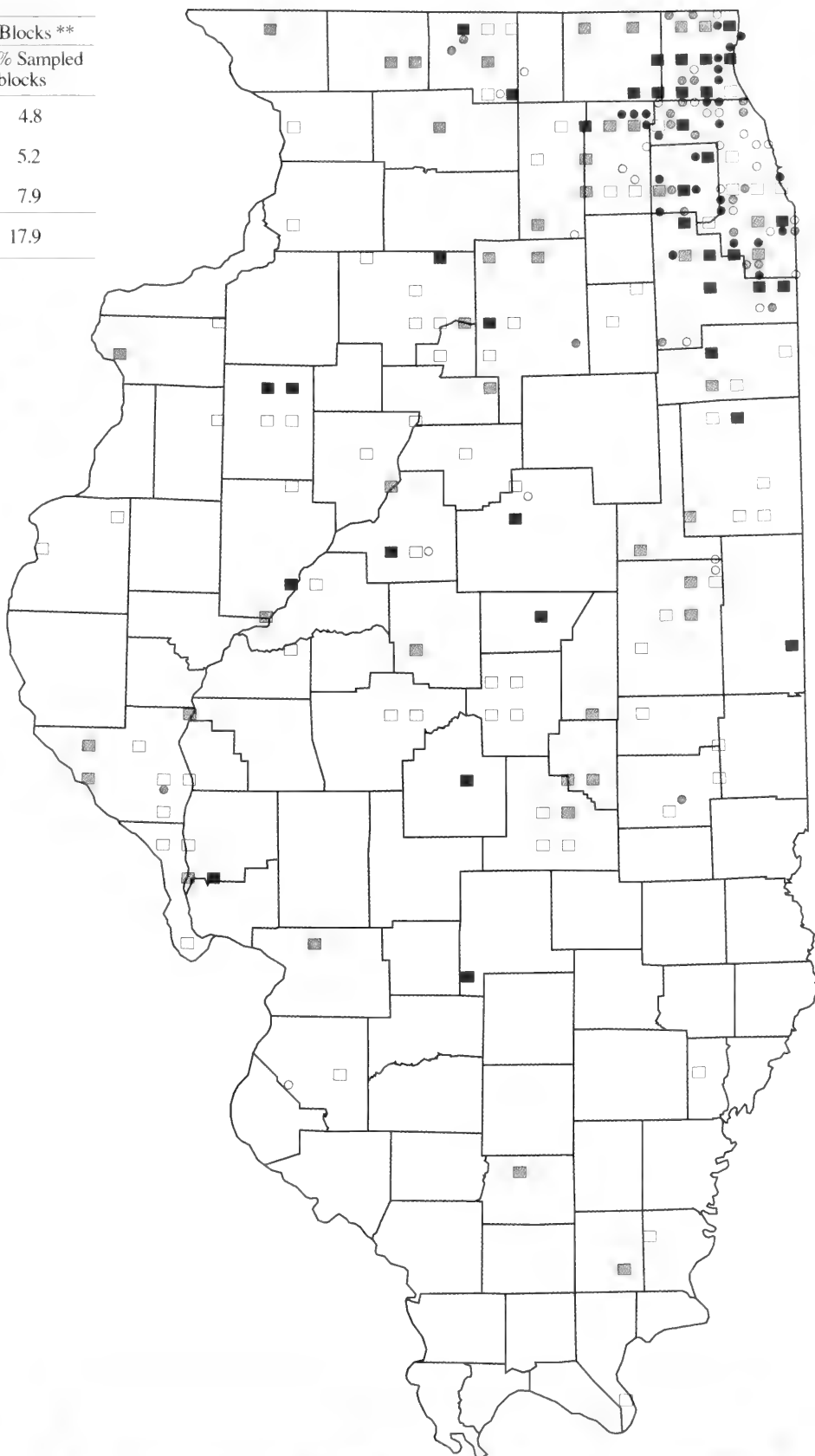


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Spotted Sandpiper**



Vernon Kleen

**Code:** UPSA

**Rangewide Distribution:** central Alaska, west-central Canada, and U.S. east of the Rockies; winters in South America.

**ILLINOIS**

**Abundance:** uncommon to rare migrant and summer resident.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** short-grass fields, pastures and airports.

**Nest:** a scrape or depression lined with grass, on ground.

**Eggs:** 4, cream or pinkish buff, with reddish brown marks.

**Incubation:** 21–27 days.

**Fledging:** about 30–31 days.

The Upland Sandpiper, previously known as Field Plover and Upland Plover, is a native of North American prairies. Unlike most shorebirds, it spends most of its life away from water. With the extensive loss of prairies, it has adapted to other short-grass habitats, such as pastures, hayfields, fallow fields, and airports (Becker 1980). The breeding range is the prairie region of the central U.S. and Canada and the northeastern U.S. from the Great Plains to the Atlantic Coast. In the eastern part of its range, its numbers are much reduced with the extensive loss of grasslands, but it is still common in parts of the Great Plains (Jackson et al. 1996). Upland Sandpipers on their breeding territories are easily recognized by sight or sound. Distinctive behaviors include a unique wing-fluttering flight and a wing-stretching posture when

landing or sitting on a post. Distinctive sounds include a warble and a loud, wolf-call-like whistle. Upland Sandpipers nest in depressions on the ground in a clump of vegetation.

**Illinois History**

During the 1800s the Upland Sandpiper was a very common summer resident throughout Illinois (Nelson 1876; Ridgway 1895; Ford 1956) and thousands more passed over during migration (Cooke 1888). However, unregulated hunting led to its near extinction in the early 1900s (Ridgway 1915). Once protective laws were enacted, the population recovered. Following the change from mixed farming to the intensive monoculture of corn and soybeans, the population plummeted again and has yet to recover. Because of its low population level and loss of essential habitat, the Upland Sandpiper is listed as an endangered species in Illinois.

**Breeding Bird Survey Trends**

This species is uncommon on Illinois BBS routes. The trend estimates for 1966–2000 are 8.3% per year (nonsignificant,  $P = 0.15$ ) for Illinois and  $-0.5\%$  per year (nonsignificant,  $P = 0.64$ ) for the upper Midwest.

*Credibility Index:*  $IL = 3$  and  $UM = 2$ .

**Distribution**

During the atlas project, the Upland Sandpiper was found in priority blocks in 26 widely scattered counties in the northern two-thirds of the state. Only 30 years ago the Upland Sandpiper regularly nested as far south as Williamson and Perry counties (Kleen, pers. obs.). Prairie Ridge State Natural Area in Jasper County is now the southernmost known site. Currently the largest concentration of nesting birds is a dozen or more pairs that occur every year at Midewin National Tallgrass Prairie in Will County. The species occurs at other protected sites with suitable habitat, including the Lost Mound National Wildlife Refuge in Jo Daviess County and Nachusa Grasslands in Lee and Ogle counties.

**Frequency**

The Upland Sandpiper was reported from 41 (4.1%) priority blocks and 16 nonpriority blocks. Breeding was Confirmed in 12 (1.2%) of the priority blocks. The calls and warbles of the Upland Sandpiper, which can be heard over a long distance, aided in their detection in May and June. Nests were difficult to find. Confirmed records in priority blocks were the result of observing young (9 FL records), distraction displays by the adults near suspected nests (2 DD records), and nest with young (1 NY record).

## Breeding Evidence

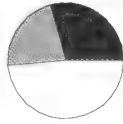
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	12	1.2	29.3	19	1.5
Probable	9	0.9	22.0	14	1.1
Possible	20	2.0	48.8	24	1.9
Totals	41	4.1	100.0	57	4.4

\* 998 priority blocks

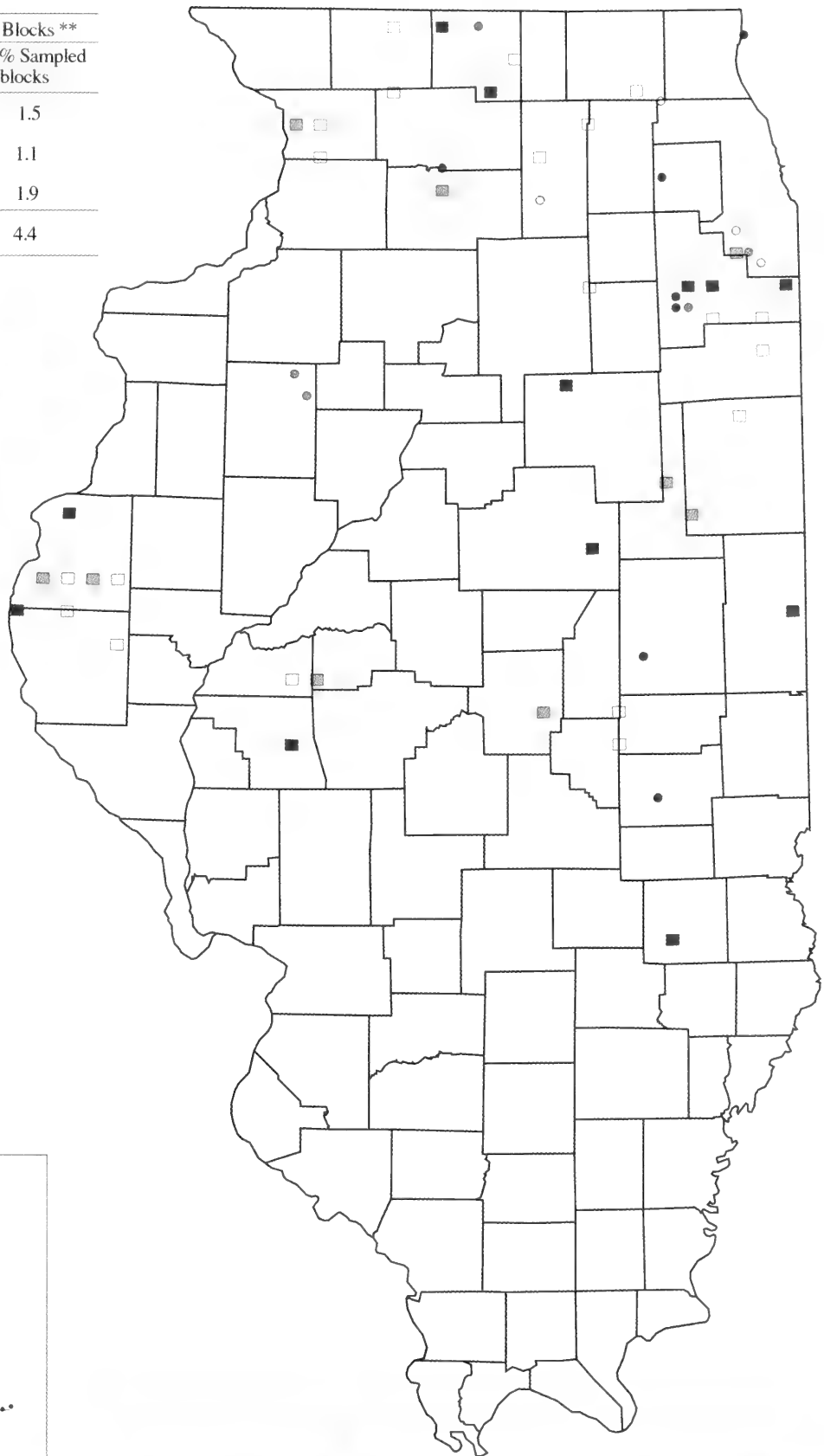
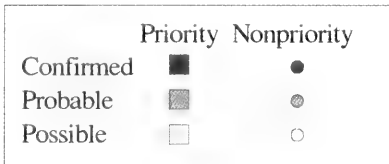
\*\* 1,286 total blocks (priority and nonpriority)



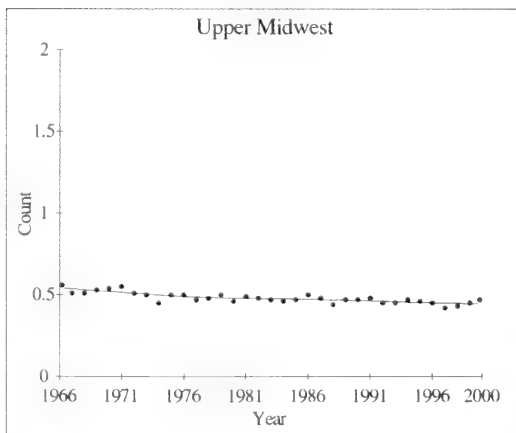
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Upland Sandpiper**

## Wilson's Snipe

## *Gallinago delicata*



Dennis Oehmke

**Code:** WISN

**Rangewide Distribution:** Eurasia, all of North America, from northern Alaska and Canada south to northern South America.

**ILLINOIS**

**Abundance:** common migrant; rare summer resident, decreasing southward; rare to uncommon winter resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** wet grassy areas.

**Nest:** a scrape lined with dead grass, leaves or moss, on ground in small clump of grass.

**Eggs:** 4, brownish to olive-buff, wreathed with brown marks.

**Incubation:** 18–20 days.

**Fledging:** about 19–20 days.

bills are used for probing the mud and soft soil in search of insects, earthworms, and other invertebrates. Nests are placed on the ground within a clump of vegetation along the edge of marshes or in wet meadows.

**Illinois History**

In the mid-to-late 1800s the Wilson's Snipe was "not a rare summer resident" in Cook County (Nelson 1876) and some remained "to breed in both states, but more commonly in Wisconsin than in Illinois" (Cory 1909). During the early decades of the 1900s, it was considered a rare summer resident in the Chicago region (Ford 1956). In the late 1950s Graber and Graber (1963) found the species only in the northern part of Illinois. There are records for summer birds in central Illinois as recently as the 1980s (Bohlen 1989). With the continued degradation and disappearance of wetlands, the snipe must certainly be less common now than it was even 50 years ago.

**Breeding Bird Survey Trends**

Too few Wilson's Snipe are detected on BBS routes to reliably estimate population trends in Illinois. For the upper Midwest the trend estimate for 1966–2000 is  $-0.1\%$  per year (nonsignificant,  $P = 0.96$ ). For the subinterval time periods from 1980 to 2000, BBS data indicate a decrease of  $-3.6\%$  per year (significant,  $P < 0.01$ ) from 1980 to 2000.

**Credibility Index:**  $IL = \text{none}$  and  $UM = 2$ .

**Distribution**

The Wilson's Snipe was reported in priority blocks in eight counties. Atlas data indicate that a small, disjunct population has survived in wetlands in northern Illinois, but the species probably occurs in greater numbers and more places than identified during the atlas project.

**Frequency**

Wilson's Snipes were reported from 10 (1.0%) priority blocks and 9 nonpriority blocks. The only Confirmed breeding record was in a nonpriority block in Winnebago County. Snipe nests and young are extremely difficult to detect (Eaton 1988). The snipe's courtship occurs early in the season and concludes by early May, well before the atlas surveys which began in June. Therefore, it is likely that snipe were inadvertently missed in several atlas blocks and could be expected to breed in suitable wetlands, especially in the northern part of the state. It is also possible that some of the atlas records represent males performing displays during migration (Mueller 1999).

The Wilson's Snipe, formerly known as the Common Snipe, is an abundant and widespread shorebird in North America that is found in many wet areas during migration (Mueller 1999). It breeds throughout Canada and Alaska and the northern U.S. The Wilson's Snipe inhabits marshy areas at the edge of water and thickets and avoids detection with its cryptic coloration and by freezing in place rather than flying at the approach of perceived danger. When flushed, it utters a single, raucous grunt and swiftly zigzags away. As part of their courtship flights male snipe produce a hollow winnowing sound, caused by the vibration of the outer tail feathers during their rapid diagonal dives (Tuck 1972). Their long

## Breeding Evidence

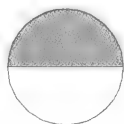
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	0	0.0	0.0	1	0.1
Probable	5	0.5	50.0	8	0.6
Possible	5	0.5	50.0	10	0.8
Totals	10	1.0	100.0	19	1.5

\* 998 priority blocks

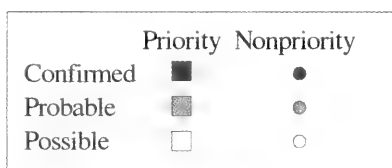
\*\* 1,286 total blocks (priority and nonpriority)



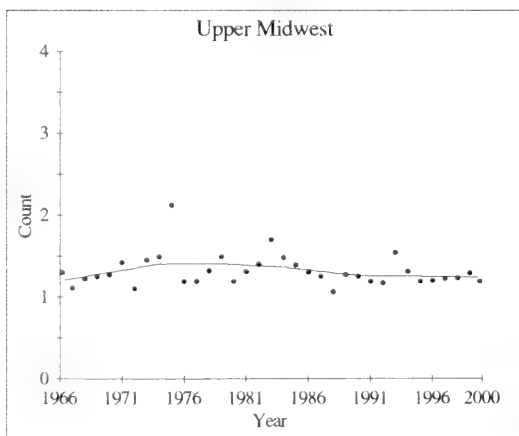
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Wilson's Snipe**



Dennis Oehmke

**Code: AMWO**

**Rangewide Distribution:** southeastern Canada and eastern U.S.

**ILLINOIS**

**Abundance:** common migrant, fairly common summer resident, rare winter resident (in south).

**Endangered/Threatened Status:** none.

**Breeding Habitat:** moist bottomlands and thickets along streams, and abandoned fields and early successional areas.

**Nest:** a scrape lined with dead leaves, on ground.

**Eggs:** 4, pinkish buff to cinnamon, somewhat wreathed with brown marks.

**Incubation:** 20–21 days.

**Fledging:** about 14 days.

The American Woodcock is a squat, fat bird with big feet, long bill, eyes near the top of its head, and practically no tail. The woodcock is a shorebird but inhabits woods and fields, especially moist, brushy successional woodlands and edges between woods and fields. It is most active at night when it is foraging for worms and insects in the moist soil. Birds return to the breeding grounds in early spring and males soon begin their elaborate courtships. The ritual, which occurs primarily at dawn and dusk, includes a peenting stint on the ground, an aerial ascent with whirring wings, a warbled whistle while circling high overhead, and a twittering of sounds on descent. The male repeatedly performs this ritual. Since nesting occurs in early spring, nests may fail because of late snowstorms. Woodcocks nest on the ground in wooded areas, along woody edges, and in brushy areas along streams. They are widely distributed in the eastern half of the

U.S. and southeastern Canada, although their numbers have recently declined due in part to the decreasing availability of early successional woodlands and young forest (Keppie and Whiting 1994).

**Illinois History**

During the late 1800s and early 1900s, the American Woodcock was found throughout the state (Ridgway 1895) and was a common summer resident (Cory 1909). It continued to be a common summer resident, at least in the Chicago region, during the first half of the 1900s (Ford 1956). It is apparently still a fairly common breeding species in appropriate habitat throughout the state.

**Breeding Bird Survey Trends**

Breeding birds return to Illinois as early as February and males soon begin their courtship display. Because peak courtship display and nesting are mostly completed by May, BBS surveys, which are generally conducted in June, likely miss the American Woodcock in Illinois. Sample size and relative abundance are low in the state; the trend for 1966–2000 is estimated at  $-2.7\%$  per year (nonsignificant,  $P = 0.82$ ). The trend estimate for the upper Midwest is positive at  $3.0\%$  per year (nonsignificant,  $P = 0.52$ ) for 1966–2000. The U.S. Fish and Wildlife Service woodcock surveys indicate significant ( $P < 0.01$ ) long-term (1968–2002) declines in the eastern and central regions of  $-2.3\%$  and  $-1.6\%$  per year, respectively (Kelley 2002).

**Credibility Index:**  $IL = 3$  and  $UM = 3$ .

**Distribution**

The breeding population of the American Woodcock was scattered throughout the state during the atlas project. Because of its nocturnal and crepuscular behavior and very early breeding season (March through May), most breeding activities were completed by the time atlas surveys began. Thus, this species may have been underreported by the atlas project. It was reported in priority blocks in 57 counties and Confirmed as breeding in 15 of them. It is possible that woodcock breed in every Illinois county.

**Frequency**

The American Woodcock was reported from 141 (14.1%) priority blocks and another 69 nonpriority blocks. Breeding was Confirmed in 23 (2.3%) of the priority blocks, with most being reports of young birds (18 FL records). It was Confirmed in 16% of the 141 priority blocks in which it was reported, which is a relatively low rate of confirmation. Since male woodcock perform their courtship rituals during migration (Peterjohn and Rice 1991), the records classified as Probable breeding based on courtship behavior should be accepted with caution.

## Breeding Evidence

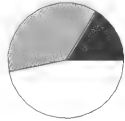
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	23	2.3	16.3	45	3.5
Probable	52	5.2	36.9	78	6.1
Possible	66	6.6	46.8	87	6.8
Totals	141	14.1	100.0	210	16.3

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

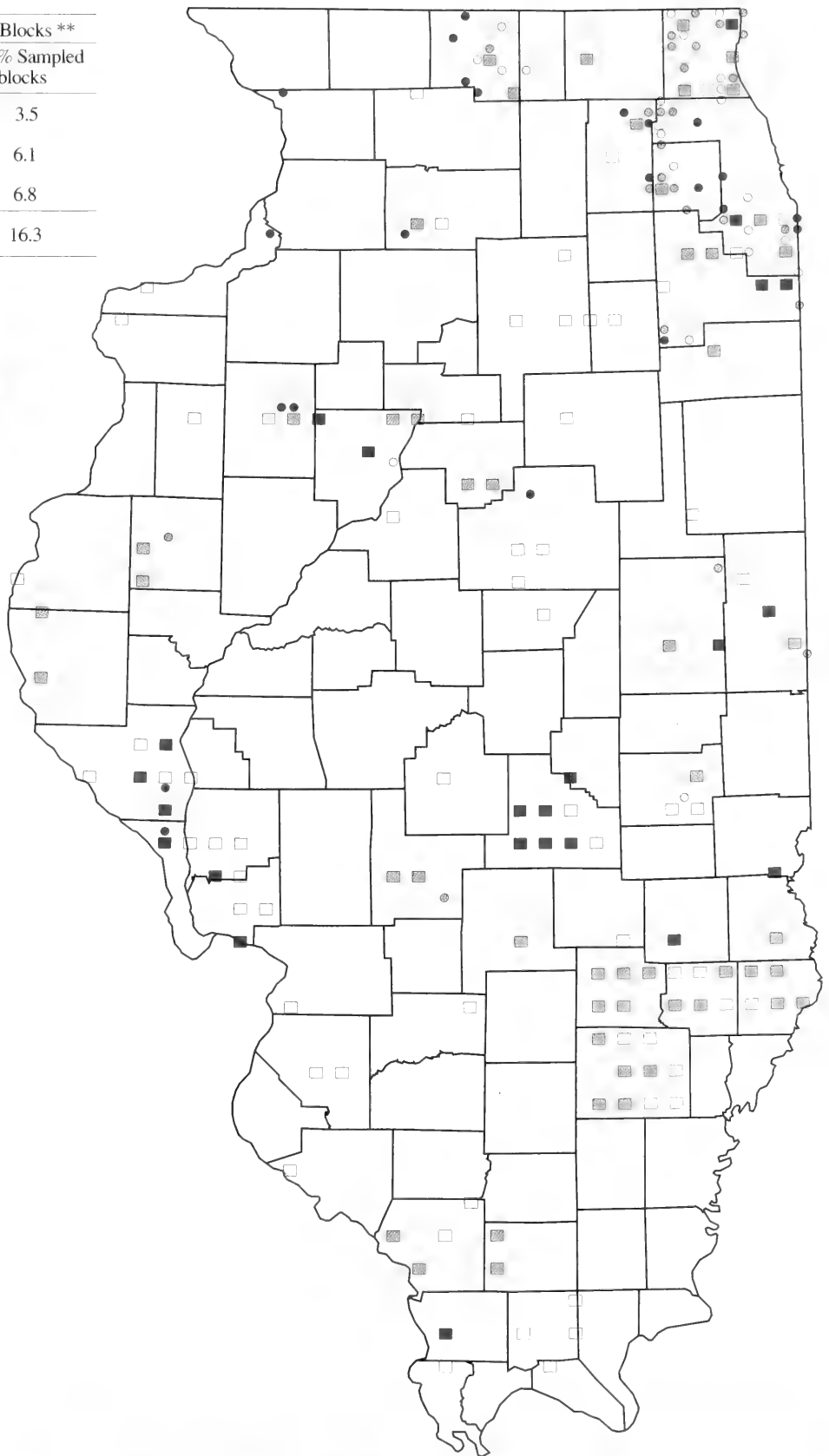


% of 998 sampled priority  
blocks (gray = no records  
for this species)



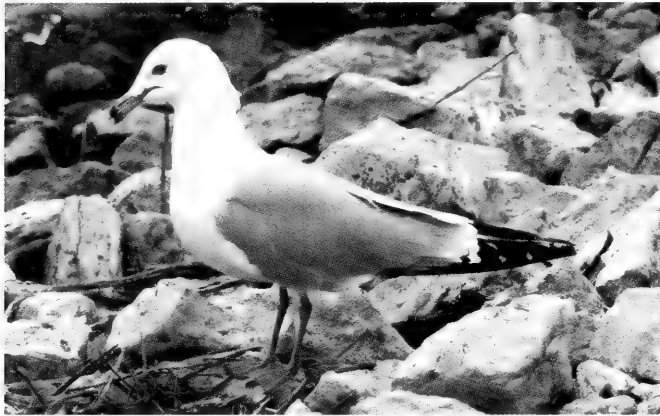
% of priority blocks  
with records for  
this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**American Woodcock**





Joe Milosevich

**Code: RBGU**

**Rangewide Distribution:** southern Canada, south through much of the U.S. into Mexico.

**ILLINOIS**

**Abundance:** common migrant and winter resident; fairly common summer resident in northeast but uncommon elsewhere, decreasing southward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** undisturbed islands and peninsulas.

**Nest:** a scrape lined with grass and debris, on the ground.

**Eggs:** 2–4, buffy white, with brown marks.

**Incubation:** 20–31 days.

**Fledging:** not specifically known.

The Ring-billed Gull, a common bird in North America, can be found nearly everywhere there are large bodies of water. They often feed and rest, however, in fields far from water. The species has adapted to civilization and is often seen at waste disposal sites and shopping-center parking lots as well as feeding in fields and nesting on rooftops. The breeding range is primarily the northern U.S. and southern and central Canada. The Ring-billed Gull population has increased rapidly in the last 50 years, especially in the Great Lakes region (Jackson et al. 1996). This species was nearly decimated by plumage and egg hunters in the late 1800s and early 1900s (Ryder 1993). The Ring-billed Gull is a colonial species, with colonies sometimes made up of thousands of nests. Because it is a ground nester, colonies are usually located where there is some protection from predators, such as on islands and peninsulas.

**Illinois History**

The Ring-billed Gull, the most common gull species in Illinois, is a relative newcomer as a breeding species in the

state. During the 1800s, it was strictly a migrant and a periodic winter resident with only a few pairs occasionally breeding as far south as Wisconsin (Cory 1909). Up to the early 1950s the species was still only a common migrant with a few birds summering on Lake Michigan (Ford 1956). During the 1960s and 1970s, the summer population increased significantly. The first nesting in Illinois, reported in July of 1975, was a colony of about 800 birds on an island in Lake Calumet (Kleen 1975). The population has continued to grow and expand. Thousands now nest at Lake Calumet, and smaller colonies are occasionally found in Lake, Will, and La Salle counties. In 2001, a group of several hundred birds was found nesting on the flat rooftop of a large vacant building in western Cook County (Anderson 2002; Kleen 2002b); this behavior was first reported from Ontario (Blokpoel and Smith 1988).

**Breeding Bird Survey Trends**

The BBS does not adequately sample most colonial nesting species. The sample size in Illinois is small and the trend estimate for 1966–2000 of 36.4% per year (nonsignificant,  $P = 0.21$ ) may not be reliable. For the upper Midwest the trend estimate is 6.7% per year (nonsignificant,  $P = 0.11$ ) for the period 1966 to 2000. Population trends may be influenced by water levels in the Great Lakes, with lower water levels exposing additional nesting locations (Southern 1987). *Credibility Index: IL = 3 and UM = 2.*

**Distribution**

Confirmed priority block records for the Ring-billed Gull were limited to southern Cook County during the atlas project. It is widely distributed as a nonbreeding species along Lake Michigan, in Will County, and along the Illinois and Mississippi rivers. Formerly limited to being only a summer resident, the Ring-billed Gull is now a very common nesting species at Lake Calumet in Cook County, with smaller numbers occasionally nesting at other sites in northeastern Illinois. This gull is still a very common, nonbreeding summer resident along Lake Michigan and is found in increasing numbers during the summer at downstate lakes and reservoirs. Since the atlas project, this gull has bred in Lake and Will counties. New colonies should be expected, including ones on flat rooftops of large, vacant buildings in the Chicago metropolitan area.

**Frequency**

The Ring-billed Gull was reported from one (0.1%) priority block and another four nonpriority blocks, all in the northeastern counties. Breeding was Confirmed in the priority block (at Lake Calumet in Cook County) and two of the nonpriority blocks.

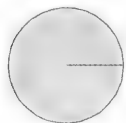


## Breeding Evidence

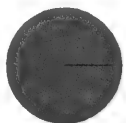
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	100.0	3	0.2
Probable	0	0.0	0.0	2	0.2
Possible	0	0.0	0.0	0	0.0
Totals	1	0.1	100.0	5	0.4

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

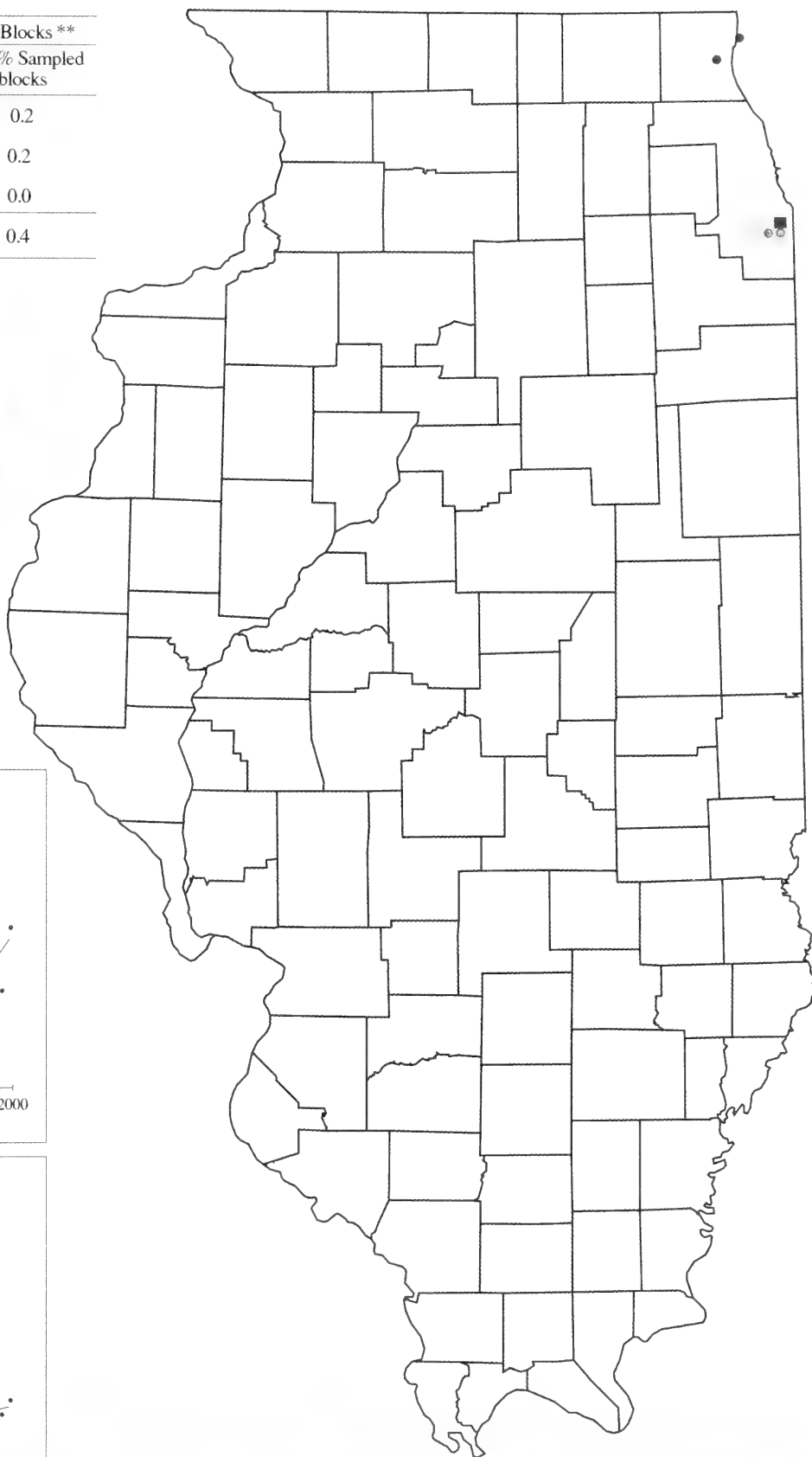


% of 998 sampled priority blocks (gray = no records for this species)



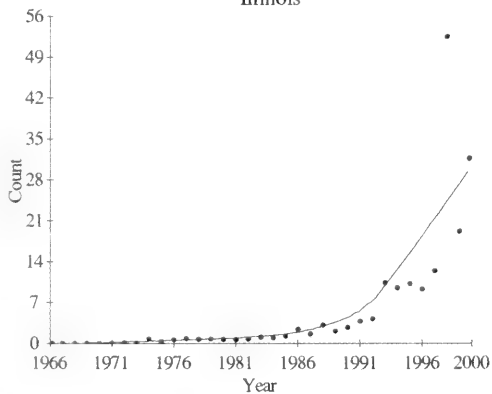
% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	▨	◐
Possible	□	○

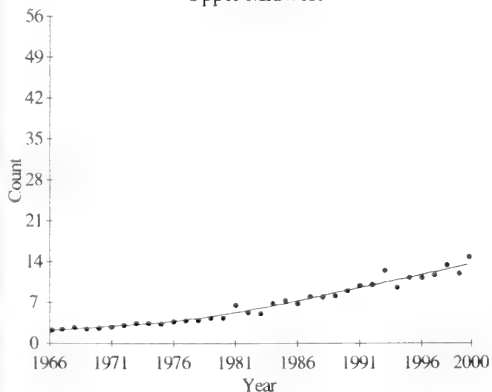


## Breeding Bird Survey Trends

Illinois



Upper Midwest



**Ring-billed Gull**



Walter Marcisz

**Code: HERG**

**Rangewide Distribution:** Europe, Asia, North America from Alaska and northern Canada, south into Central America.

**ILLINOIS**

**Abundance:** common migrant and winter resident, fairly common summer resident in northeast but uncommon elsewhere, decreasing southward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** undisturbed islands and peninsulas with grassy substrates.

**Nest:** a scrape lined with grasses and debris, on the ground.

**Eggs:** 3, olive to light blue or cinnamon, with brown marks.

**Incubation:** 30-32 days.

**Fledging:** not specifically known.

The Herring Gull inhabits shorelines of lakes, large rivers, and oceans. It primarily breeds in most of Canada and Alaska, and along the northeast coast and Great Lakes region of the U.S. It is typically a colonial nesting species like its congener, the Ring-billed Gull. A colony often consists of other gulls and terns. It is not uncommon for scattered pairs to nest in isolated locations far away from the nearest colony. Although these gulls have a varied diet, they are frequent scavengers along shorelines. In the Great Lakes, breeding pairs appear to feed on fish. Many birds are seen at landfills,

but most adults appear to be simply loafing (Belant et al. 1993). Scavenging at landfills, however, may improve the survival of overwintering immature birds (Pierotti and Good 1994).

**Illinois History**

The Herring Gull is a relative newcomer as a breeding species in Illinois. During the 1800s, it was a common migrant and winter resident on Lake Michigan (Cory 1909). By the early 1950s it was not yet a breeding species, but was present throughout the year in the Chicago region (Ford 1956); the closest breeding location was in Wisconsin. The first known nesting attempt occurred along with that of the Ring-billed Gulls at Lake Calumet in Cook County in 1976 and the first nesting success was at that site in 1978 (Kleen 1976b, 1978). During the next few years, there were hundreds of nests (Kleen 1986). Since then, one or two pairs have nested at other isolated locations in the northeastern part of the state.

**Breeding Bird Survey Trends**

The BBS does not adequately sample colonial nesting birds. In Illinois the trend estimate for 1966–2000, 3.0% per year (nonsignificant,  $P = 0.33$ ), is based on low sample size. For the upper Midwest the trend estimate for the same period is  $-2.9\%$  per year (nonsignificant,  $P = 0.26$ ).

*Credibility Index: IL = 3 and UM = 1.*

**Distribution**

During the atlas project, priority block records for the Herring Gull were limited to Will County. The primary location in Illinois for nesting Herring Gulls is Lake Calumet in Cook County. However, small numbers, usually one or two pairs, have opportunistically nested at other sites in Cook County and, more recently, Lake County (Kleen 2002a). Herring Gulls are fairly common, nonbreeding summer residents along Lake Michigan and are occasionally found elsewhere in the state along the major rivers and at lakes and reservoirs. Potential nesting is possible at these sites.

**Frequency**

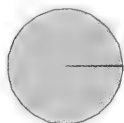
The Herring Gull was reported from two (0.2%) priority blocks and another seven nonpriority blocks, all in the northeastern counties. It was not Confirmed as breeding in the priority blocks but was Confirmed in three nonpriority blocks, one each in western Will, northwestern Cook, and Lake counties.

## Breeding Evidence

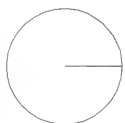
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	0	0.0	0.0	3	0.2
Probable	0	0.0	0.0	1	0.1
Possible	2	0.2	100.0	5	0.4
Totals	2	0.2	100.0	9	0.7

\* 998 priority blocks

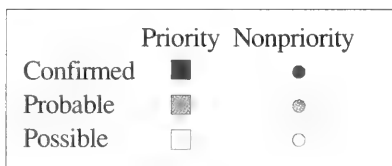
\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

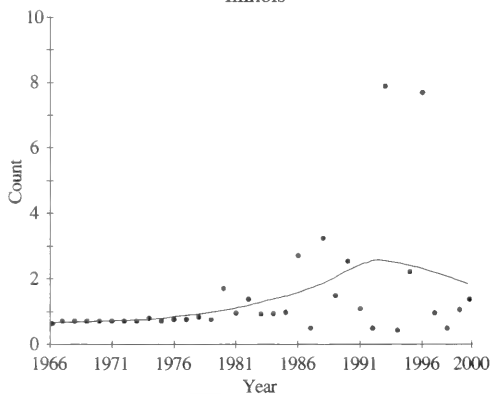


% of priority blocks with records for this species

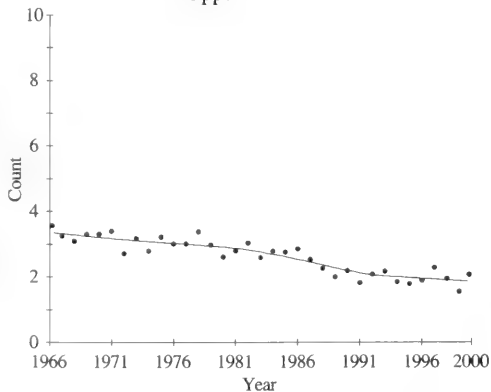


## Breeding Bird Survey Trends

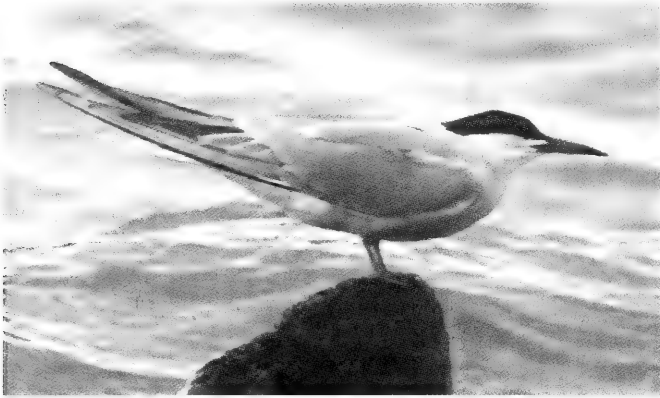
Illinois



Upper Midwest



**Herring Gull**



Eric Walters

**Code:** COTE

**Range-wide Distribution:** Europe, Asia, Africa, southern Canada and eastern U.S., south along coasts of South America.

**ILLINOIS**

**Abundance:** common migrant and very rare summer resident along Lake Michigan; fairly common to uncommon migrant elsewhere.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** undisturbed, predator-free islands and peninsulas with sparse vegetation.

**Nest:** a scrape lined with shells, debris, or grass, on the ground.

**Eggs:** 3, buff, olive or brownish, wreathed with dark brown.

**Incubation:** 21–27 days.

**Fledging:** about 26 to 27 days.

The Common Tern is the most widespread and familiar tern in North America, where it breeds mainly along the Atlantic coast, in the northern states, and in southeastern and central Canada. It nests in colonies on islands and peninsulas with sand or pebble beaches and a mix of open area and scattered cover. Nests are placed on the ground in the open with some cover available nearby. This graceful flier forages over the open water of lakes, rivers, ponds, and coastal waters, feeding on small fish near the surface. Common Terns were nearly extirpated in some parts of their range by plumage hunters in the late 1800s. With the enactment of protective laws their numbers recovered by the 1930s. Populations declined again beginning in the mid-1900s due to toxic

chemicals in the environment and competition from gulls; numbers are currently well below historical highs (Nisbet 2002).

**Illinois History**

During the late 1800s, the Common Tern was considered a nesting species in southern Wisconsin, and possibly in the Mississippi Valley; however, there were no confirmations for Illinois (Ridgway 1895; Cory 1909). The first published nesting record occurred in the Public Service Grounds at Waukegan (Lake County) in 1936 (Lyon 1937), although a few birds may have nested there a few years prior to being reported. Several pairs continued nesting there through 1940 (Blake 1940; Ford 1956). The Common Tern was then apparently absent as a nesting species until 1976 when nesting was again attempted in northeastern Lake County (Kleen 1976b). It has attempted nesting in the area with only occasional success in most years since, including 2001 (Kleen 2002a). Recent attempts to nest have occurred on isolated and protected dikes in the closed portion of the power plant at Waukegan in Lake County and at a small, protected sandbar island at the nearby Great Lakes Naval Training Center. Nesting was confirmed in 2000 at the Great Lakes Naval Training Center (D. Dann in Kleen 2001c). It appears that Common Terns have been unable to find a consistently safe and secure nesting site in Illinois to raise their young. Because of a very limited distribution, small population size, and vulnerability to disturbance by predators, humans, and larger nesting species, the Common Tern is listed as an endangered species in Illinois.

**Breeding Bird Survey Trends**

Neither the state nor region had sufficient BBS data to estimate population trends for this locally distributed species. *Credibility Index: IL = none and UM = none.*

**Distribution**

Atlas data indicate that Common Terns occurred in both Lake and Cook counties; however, nesting was limited to coastal Lake County. Small numbers have been reported during the summer from other lakefront or near lakefront sites, including sites in Cook County.

**Frequency**

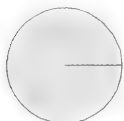
During the atlas project, Common Terns were not reported from any priority blocks, but were encountered in two nonpriority blocks in the northeastern counties. The only confirmation occurred at the Commonwealth Edison Power Plant at Waukegan in Lake County (Dann 1999).

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	0	0.0	0.0	1	0.1
Probable	0	0.0	0.0	0	0.0
Possible	0	0.0	0.0	1	0.1
Totals	0	0.0	100.0	2	0.2

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Common Tern**



Eric Walters

**Code: FOTE**

**Rangewide Distribution:** scattered locations in south-central Canada, the U.S., and Mexico.

**ILLINOIS**

**Abundance:** common migrant, very rare summer resident in northeast.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** marsh-bordered lakes.

**Nest:** a compactly woven platform lined with reeds and grass, on floating vegetation or muskrat house.

**Eggs:** 3, buff, dark brown marks (often wreathed).

**Incubation:** 23–24 days.

**Fledging:** not specifically known.

The Forster's Tern is found around lakes, ponds, rivers, and marshes. Its breeding range includes south-central Canada, the central and western U.S., and the Atlantic, Gulf, and Pacific coasts. Forster's Terns are not abundant and the population seems to be declining in recent years (Jackson et al. 1996). Unlike the ground-nesting Common Tern, the Forster's Tern is found in the open, deeper parts of undisturbed, high-quality, predator-free marshes usually with relatively large amounts of both open water and emergent or floating vegetation (McNicholl et al. 2001). Preservation and

restoration of large wetland systems are important for the continued survival of this species.

**Illinois History**

In the 1800s the Forster's Tern was considered "the common tern of the Mississippi Valley, and probably the only species of the genus which breeds in Illinois" (Ridgway 1895). It was recorded as nesting at Grass Lake (perhaps the current Chain O' Lakes State Park in Lake County) in 1876 (Nelson 1876) and in 1938 (Ford 1956). The next reported nesting was at Chain O' Lakes State Park (16 pairs) in 1982 (Kleen 1982) and sporadic nesting has occurred there through at least 1991, when there was a state high of 37 nests (Heidorn 1993; Kleen 1992). By 1998 it was apparently gone again from Illinois. Conservation efforts are currently under way to bring this species back to the state (Brad Semel, pers. comm.). The availability of suitable wetland sites in Illinois is a limiting factor and the presence of people and fast boats (their floating nests need a wake-free zone) at the only nesting site in the state imperils successful breeding in Illinois. Although the Forster's Tern has never been a common nor widely distributed nesting species in Illinois, its single nesting site and dependence on large, undisturbed lakes with marshy borders were sufficient reasons for it to be declared an endangered species in Illinois.

**Breeding Bird Survey Trends**

Breeding in Illinois is limited to a single site, so there is no BBS trend estimate for the state. For the upper Midwest the trend estimate for 1966–2000 is 1.0% per year (nonsignificant,  $P = 0.84$ ); sample size is low.

*Credibility Index: IL = none and UM = 3.*

**Distribution**

Before, during, and after the atlas project, Forster's Terns have nested only in the marshy areas of Grass Lake at Chain O' Lakes State Park in northwestern Lake County.

**Frequency**

The Forster's Tern was reported from a single (0.1%) priority block and one nonpriority block, both in Lake County. It was Confirmed as breeding in both blocks.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	100.0	2	0.2
Probable	0	0.0	0.0	0	0.0
Possible	0	0.0	0.0	0	0.0
Totals	1	0.1	100.0	2	0.2

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Forster's Tern**



Eric Walters

**Code:** BLTE

**Rangewide Distribution:** western and southern Canada, to coasts of northern South America.

**ILLINOIS**

**Abundance:** fairly common migrant, rare summer resident in the northeast.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** undisturbed marshes in lakes with dense, emergent vegetation.

**Nest:** a platform (often a loose, floating mat) of damp vegetation in the emergent vegetation (just above water level).

**Eggs:** 3, dark olive or buff, wreathed with dark brown.

**Incubation:** 21–22 days.

**Fledging:** from 21 to 28 days.

The Black Tern breeds locally in the northern U.S. and southern and western Canada. It forages over open water, often in groups, for insects, other invertebrates, and occasionally small fish. It is a marsh species that usually occurs at large (> 124 acres) (Brown and Dinsmore 1986) undisturbed lakes with patches of tall, emergent vegetation, such as cattails and bulrushes. Black Terns nest as scattered pairs or in loose colonies, usually 10 or fewer pairs. Nests are placed in dense vegetation near open water and may be

floating, completely surrounded by water, and weakly attached to the vegetation, or placed on an old muskrat house, floating log, or raised patch of mud. The loss of wetlands, especially larger ones, has negatively impacted Black Tern populations since Euro-American settlement. Their success as a breeding species requires the availability of suitable, undisturbed high-quality marshes for nesting.

**Illinois History**

During the 1800s and early 1900s, the Black Tern was considered an abundant summer resident on the inland lakes and marshes of northeastern Illinois (Nelson 1876; Cory 1909) and remained a common summer resident in the Chicago region through the first half of the twentieth century (Ford 1956). With the draining, filling, and other modifications of wetlands, available nesting habitat has been greatly reduced. Black Terns continue to nest in isolated and well-protected marshes, especially in northwestern Lake County. The small population and diminished availability of suitable wetland habitat prompted the listing of the Black Tern as an endangered species in Illinois.

**Breeding Bird Survey Trends**

There are insufficient BBS data for estimating trends for this wetland species. In the upper Midwest the trend estimate is –4.4% (significant,  $P = 0.04$ ) from 1966 to 2000.

*Credibility Index:* IL = none and UM = 3.

**Distribution**

During the atlas project, Black Terns were limited to the high-quality wetlands and lakes of McHenry, Lake, Kane, Cook, and DuPage counties with additional observations in Ogle and Winnebago counties. Currently there are less than five known breeding sites.

**Frequency**

The Black Tern was reported from 7 (0.7%) priority blocks and 11 nonpriority blocks. Breeding was Confirmed in 4 (0.4%) of the priority blocks and 5 nonpriority blocks. The occurrences in Winnebago and Ogle counties, which are near the expected breeding area of northeastern Illinois, need further investigation. The Possible record from Moultrie County was probably a late spring migrant.



## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	4	0.4	57.1	9	0.7
Probable	1	0.1	14.3	3	0.2
Possible	2	0.2	28.6	6	0.5
Totals	7	0.7	100.0	18	1.4

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

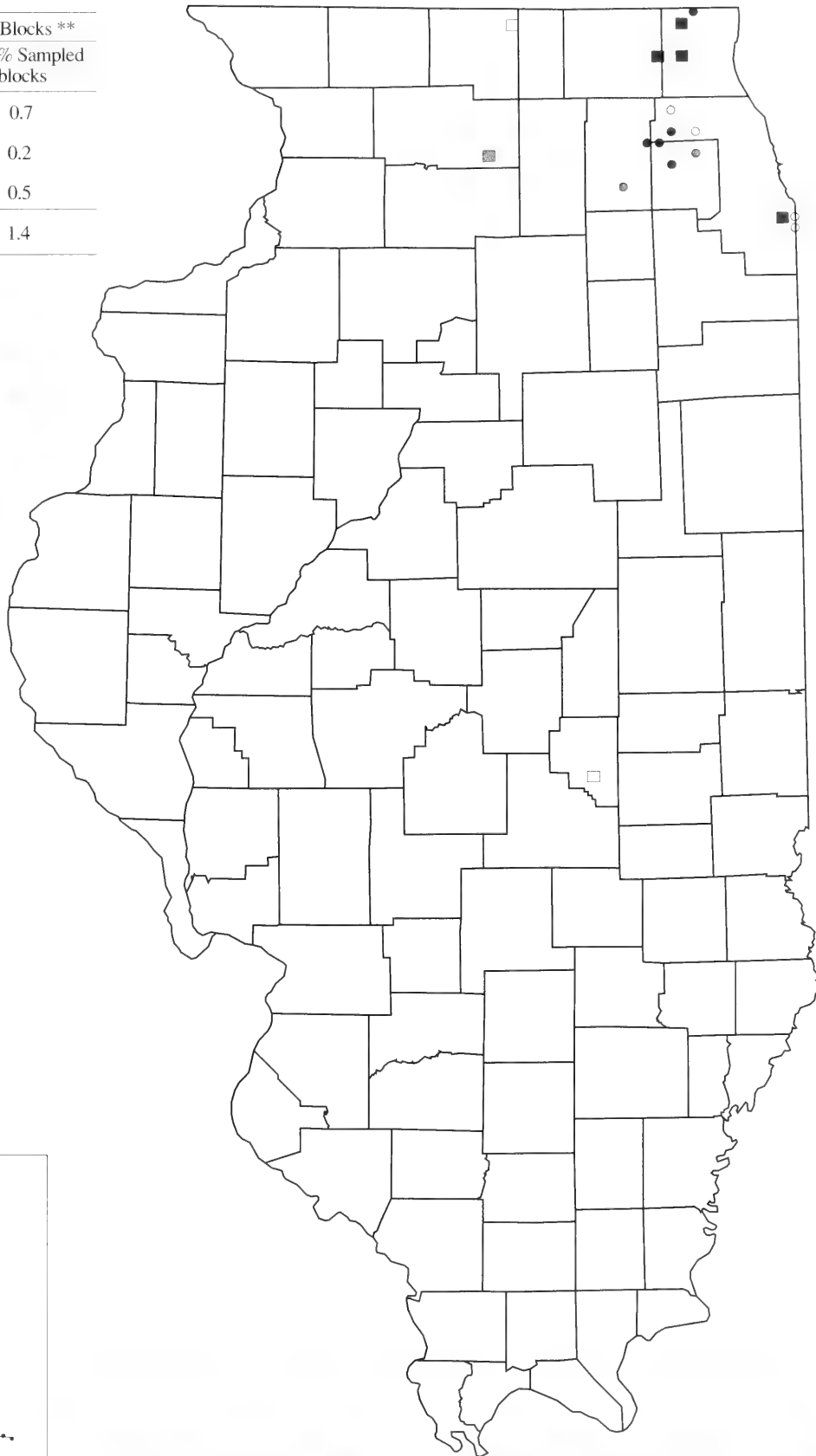


% of 998 sampled priority blocks (gray = no records for this species)

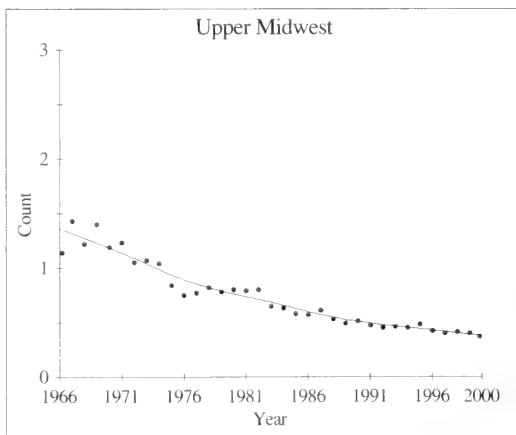


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Black Tern**



Dennis Oehmke

and are commonly domesticated and raced by pigeon fanciers.

## Illinois History

Although Rock Pigeons were present in Illinois in the 1800s and early 1900s, they were ignored in early publications (Ridgway 1889; Cory 1909; Schantz 1928) because they were a domesticated species. In the 1950s the Rock Pigeon was considered a common (Ford 1956) and abundant (Smith and Parmalee 1955) permanent resident. This species was included in the Spring Bird Count beginning in 1972 (Kleen 1973a) and the Christmas Bird Count in 1973 (Struthers 1974). Presently it is still an abundant permanent resident, especially in urban settings.

## Breeding Bird Survey Trends

For 1966–2000 the trend estimate for the Rock Pigeon in Illinois is  $-1.0\%$  per year (nonsignificant,  $P = 0.14$ ). The data indicate an increase of  $3.0\%$  per year (significant,  $P < 0.01$ ) in the Illinois population from 1966 to 1979 and a decrease of  $-3.9\%$  per year (significant,  $P = 0.01$ ) from 1980 to 2000. The trends were similar for the upper Midwest, with an estimated rate of  $-0.7\%$  per year (nonsignificant,  $P = 0.05$ ) for 1966–2000 and a positive trend (significant,  $P < 0.01$ ) for 1966–1979 followed by a negative trend (significant,  $P < 0.01$ ) for 1980–2000.

*Credibility Index:* IL = 2 and UM = 2.

## Distribution

Rock Pigeons are a common nesting species in all 102 Illinois counties. During the atlas project it was one of the most frequently reported species from priority blocks.

## Frequency

The Rock Pigeon was reported from 824 (82.6%) priority blocks and 155 nonpriority blocks. Breeding was Confirmed in 510 (51.1%) of the priority blocks and probably occurred in the majority of the other priority blocks where they were recorded. This species was easily Confirmed. The most frequently used breeding evidence for Confirmed records in priority blocks was occupied nests (274 ON records) followed by fledged young (88 FL records) and nest with young (65 NY records). Since Rock Pigeons are easily observed and typically occur in flocks, they may have actually been absent during the atlas project in those blocks where they were not reported.

## Code: ROPI

**Rangewide Distribution:** native to Eurasia; introduced and established throughout the world; in North America from southern Canada through all of the U.S. and Central America.

## ILLINOIS

**Abundance:** abundant year-round resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** cliffs, ledges, urban and rural buildings, and bridges.

**Nest:** a loose saucer of roots, stems, and leaves, on a ledge or under eaves.

**Eggs:** 2, white, unmarked.

**Incubation:** 16–19 days.

**Fledging:** about 25–26 days.

Rock Pigeons were introduced into the United States around 1621 (Long 1981) and are now abundant and widespread throughout North America; their breeding range extends from southern Canada to Central America and includes all of the U.S. More commonly known as pigeons, Rock Pigeons are nonmigratory, permanent residents in urban and rural areas that can be found wherever a continual supply of food, especially grain, is available. They usually occur in flocks and regularly congregate around and nest on man-made structures, such as grain elevators, farm buildings, bridges, churches, warehouses, and city buildings, especially those with ledges. Rock Pigeons come in a variety of color patterns

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	510	51.1	61.9	595	46.3
Probable	137	13.7	16.6	168	13.1
Possible	177	17.7	21.5	216	16.8
Totals	824	82.6	100.0	979	76.1

\* 998 priority blocks

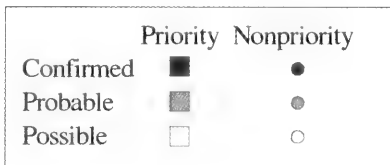
\*\* 1,286 total blocks (priority and nonpriority)



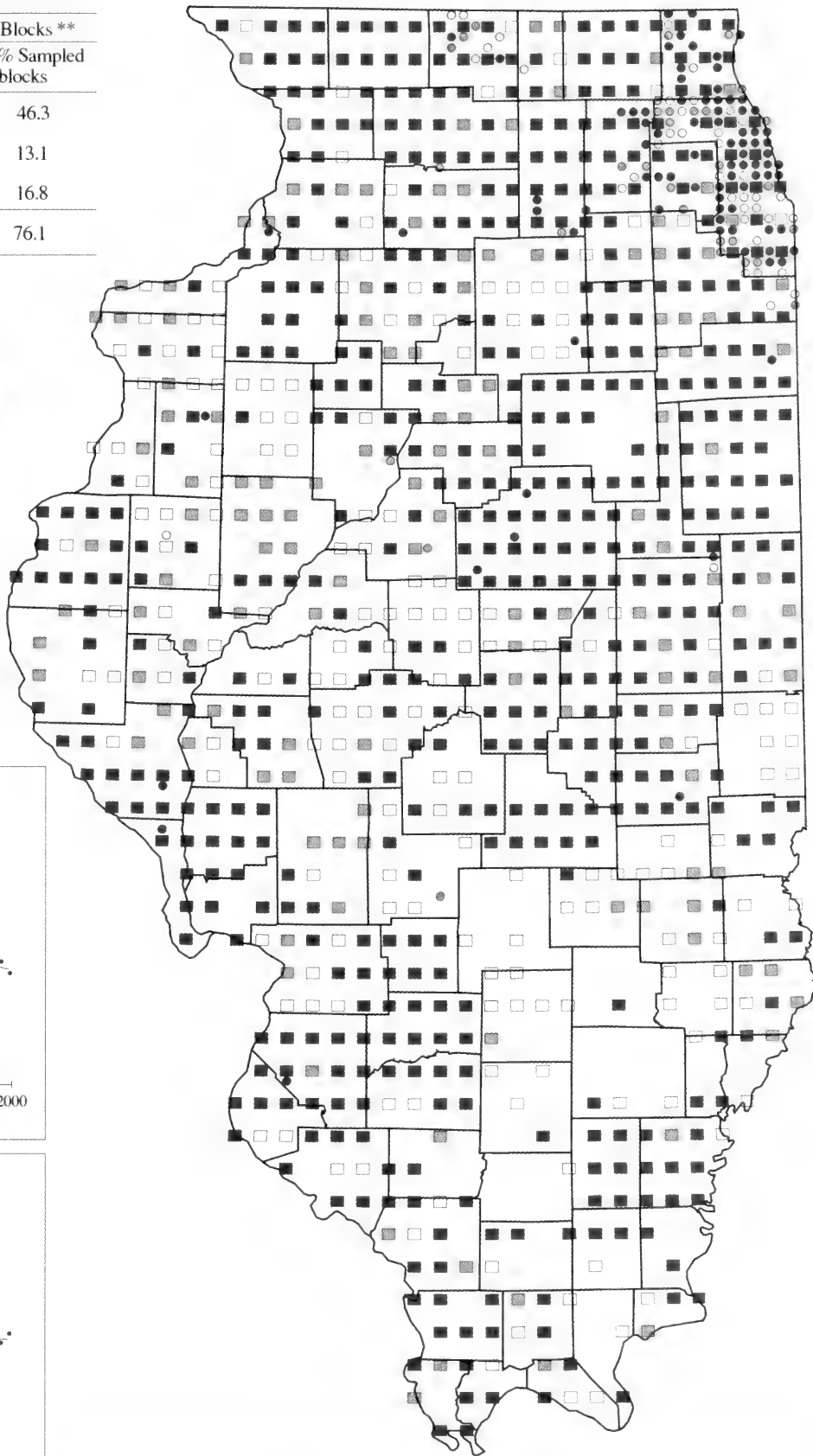
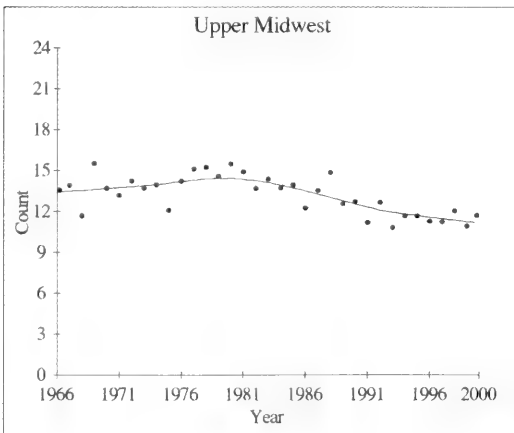
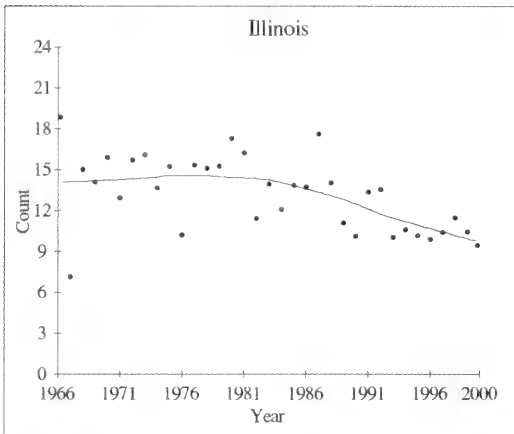
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Rock Pigeon**



Dennis Oehmke

**Code: MODO**

**Rangewide Distribution:** southern Canada, south through nearly all of the U.S. to Panama.

**ILLINOIS**

**Abundance:** abundant migrant and summer resident, common winter resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open woodlands, agricultural areas, grasslands, and urban/suburban areas.

**Nest:** a flimsy saucer of crossed sticks and twigs, usually in a tree (occasionally on the ground).

**Eggs:** 2, white, unmarked.

**Incubation:** 13–14 days.

**Fledging:** from 12 to 14 days.

The Mourning Dove is one of the most abundant and widespread birds in North America, where it breeds from southern Canada to southern Mexico, including all of the lower 48 states. It is one of a few native species that thrives in an environment changed by agriculture and urbanization, and its distribution and abundance have increased since Euro-American settlement of North America. This species forages and nests in a variety of open habitats, including

hedgerows, edge shrubbery, orchards, and residential areas. It feeds primarily on seeds and grain. Mourning Doves begin courtship and nesting as soon as the earliest warm spell arrives (February or March in Illinois) and continue to nest throughout the summer, producing several broods each year. The Mourning Dove is the leading game bird in North America (Mirarchi and Baskett 1994).

**Illinois History**

During the late 1800s, the Mourning Dove was considered a common summer resident in northern Illinois and a common permanent resident in southern Illinois (Cory 1909). During the 1907–1909 and 1956–1958 censuses, Graber and Graber (1963) reported that the population levels were similar in 1909 and 1957, and, with some variability, the population was higher in the southern zone in the summer during both censuses. The northern population becomes decidedly smaller during the winter months. Mourning Doves are a popular game bird in Illinois.

**Breeding Bird Survey Trends**

The trend estimates for the Mourning Dove population are 0.5% (nonsignificant,  $P = 0.37$ ) for Illinois and  $-0.1\%$  (nonsignificant,  $P = 0.76$ ) for the upper Midwest from 1966 to 2000. The fluctuation in annual abundance may be due to factors such as weather during the preceding winter and breeding seasons and the phenology of the current breeding season.

**Credibility Index:**  $IL = 2$  and  $UM = 2$ .

**Distribution**

During the atlas project, the Mourning Dove was one of the most common (Table 4) and widely distributed species. It occurred in priority blocks in every county in the state.

**Frequency**

The Mourning Dove was reported from 988 (99.0%) priority blocks and 182 nonpriority blocks. Breeding was Confirmed in 733 (73.4%) of the priority blocks and may have occurred in all priority blocks. The Mourning Dove was an easy species to detect and confirm. Half the Confirmed records in priority blocks were fledged young (372 FL records).

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	733	73.4	74.2	856	66.6
Probable	214	21.4	21.7	255	19.8
Possible	41	4.1	4.1	59	4.6
Totals	988	99.0	100.0	1,170	91.0

\* 998 priority blocks

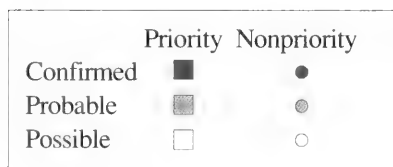
\*\* 1,286 total blocks (priority and nonpriority)



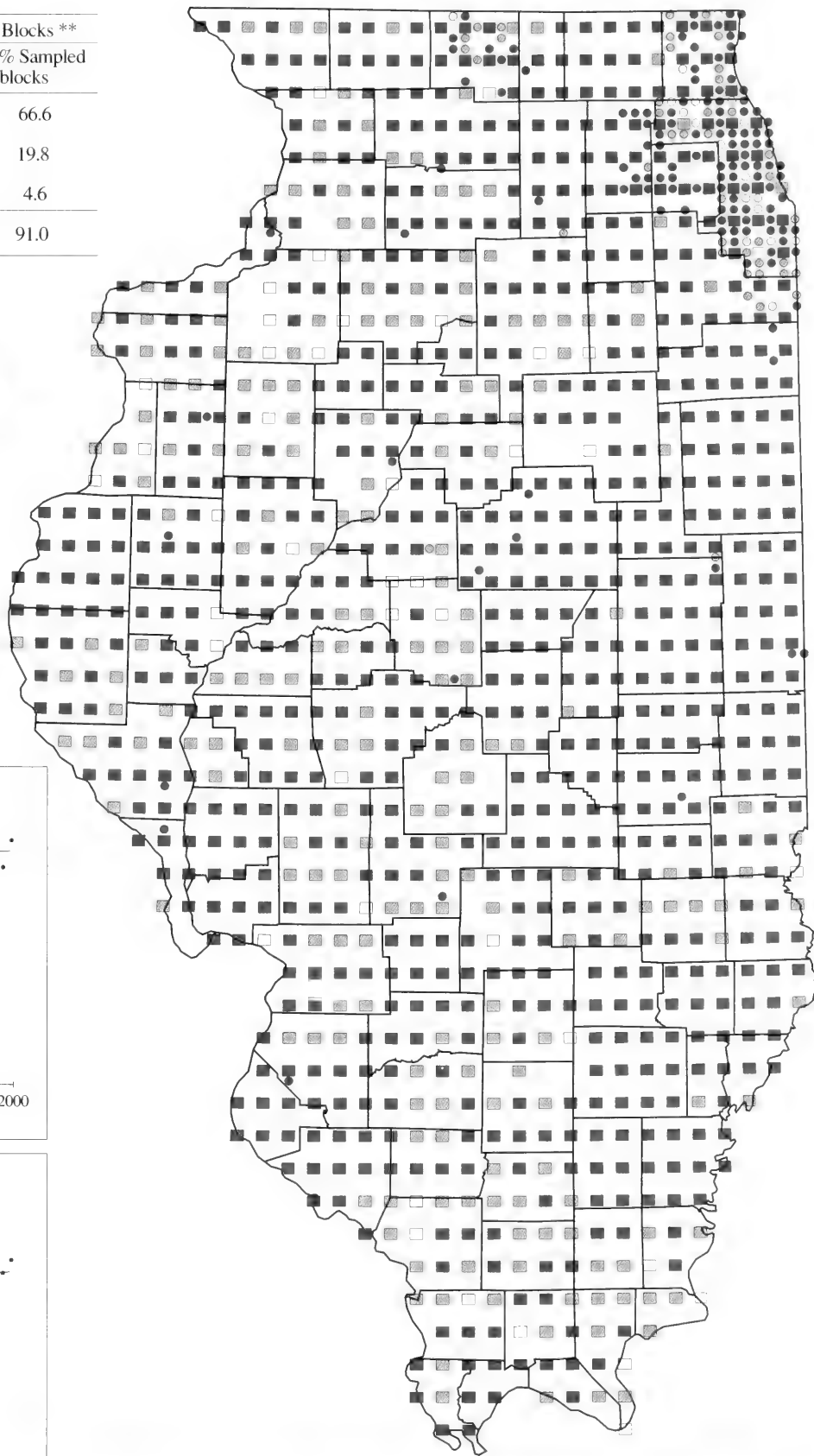
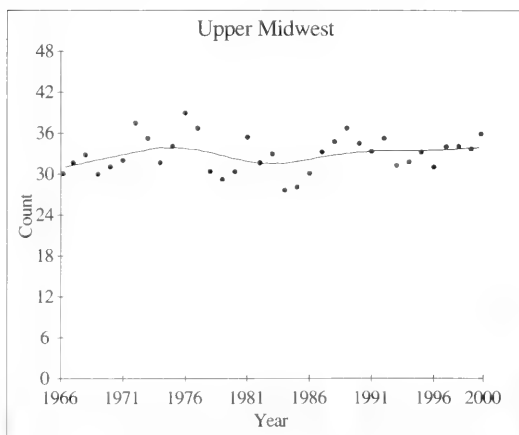
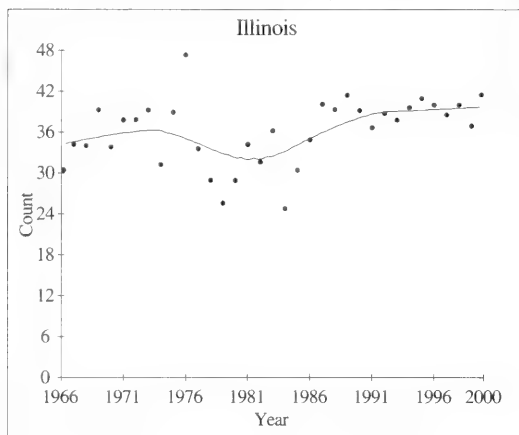
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Mourning Dove**



Dennis Oehmke

## Code: MOPA

**Rangewide Distribution:** primarily a species of south-central South America; occurs in isolated populations at scattered locations in the U.S., especially in Florida and Texas.

## ILLINOIS

**Abundance:** uncommon and local permanent resident in Chicago and spreading to surrounding communities.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** urban areas with groves of trees.

**Nest:** a large, bulky, dome-shaped structure of sticks with several compartments for communal use, in a tree, building, or on a telephone pole.

**Eggs:** 4–6, glossy white.

**Incubation:** 28–31 days.

**Fledging:** 35 or more days.

The Monk Parakeet, a medium-sized green, gray, and yellow parrot with blue primaries, is native to southern South America. During the late 1960s and early 1970s, the Monk (or Quaker) Parakeet was introduced into the wild in North America at several locations as a result of released or escaped pets. Small, scattered populations occur in several states, especially Florida and Texas. It builds a bulky communal nest of sticks up to three feet in diameter in trees

or on utility poles and transformers. It feeds on a variety of seeds and fruits. Biologists and agricultural economists are monitoring the Monk Parakeet population, hoping it does not become the agricultural pest that it is in its native South America.

## Illinois History

The Monk Parakeet is a new addition to the breeding avifauna of Illinois. The only parrot native to Illinois was the Carolina Parakeet, which was last recorded in the wild in Illinois in 1912 (Bent 1940) and is now extinct. Monk Parakeets occur at various sites throughout the state as a result of escaped and intentionally released birds. Those in the Chicago area have survived and established breeding colonies. The first successful nest was identified at Hinsdale in 1973 (Larson 1973). Since then, colonies have become established in other locations in Cook County and have expanded into at least Lake, DuPage, and Will counties. At Hyde Park in Cook County, South (1999) reported 49 different nests, indicated that 1 nest contained up to 83 active chambers, and estimated the local population there to be about 240 birds.

## Breeding Bird Survey Trends

BBS data were insufficient to estimate population trends for this introduced and localized species.

*Credibility Index: IL = none and UM = none.*

## Distribution

During the atlas project, the Monk Parakeet was limited to Cook, Lake, and DuPage counties. Even though the population expansion has been exponential in some areas (Van Bael and Preutt-Jones 1996), the Illinois population may not be expanding so rapidly (South 1999). Periodic surveys should be planned to monitor its population. The recent discovery of a new nest in Carlyle suggests the species may become established outside of the Chicago area.

## Frequency

The Monk Parakeet was reported from four (0.4%) priority blocks and nine nonpriority blocks. It was Confirmed in three of the priority blocks. Monk Parakeets were easy to detect when present.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	3	0.3	75.0	11	0.9
Probable	0	0.0	0.0	0	0.0
Possible	1	0.1	25.0	2	0.2
Totals	4	0.4	100.0	13	1.0

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

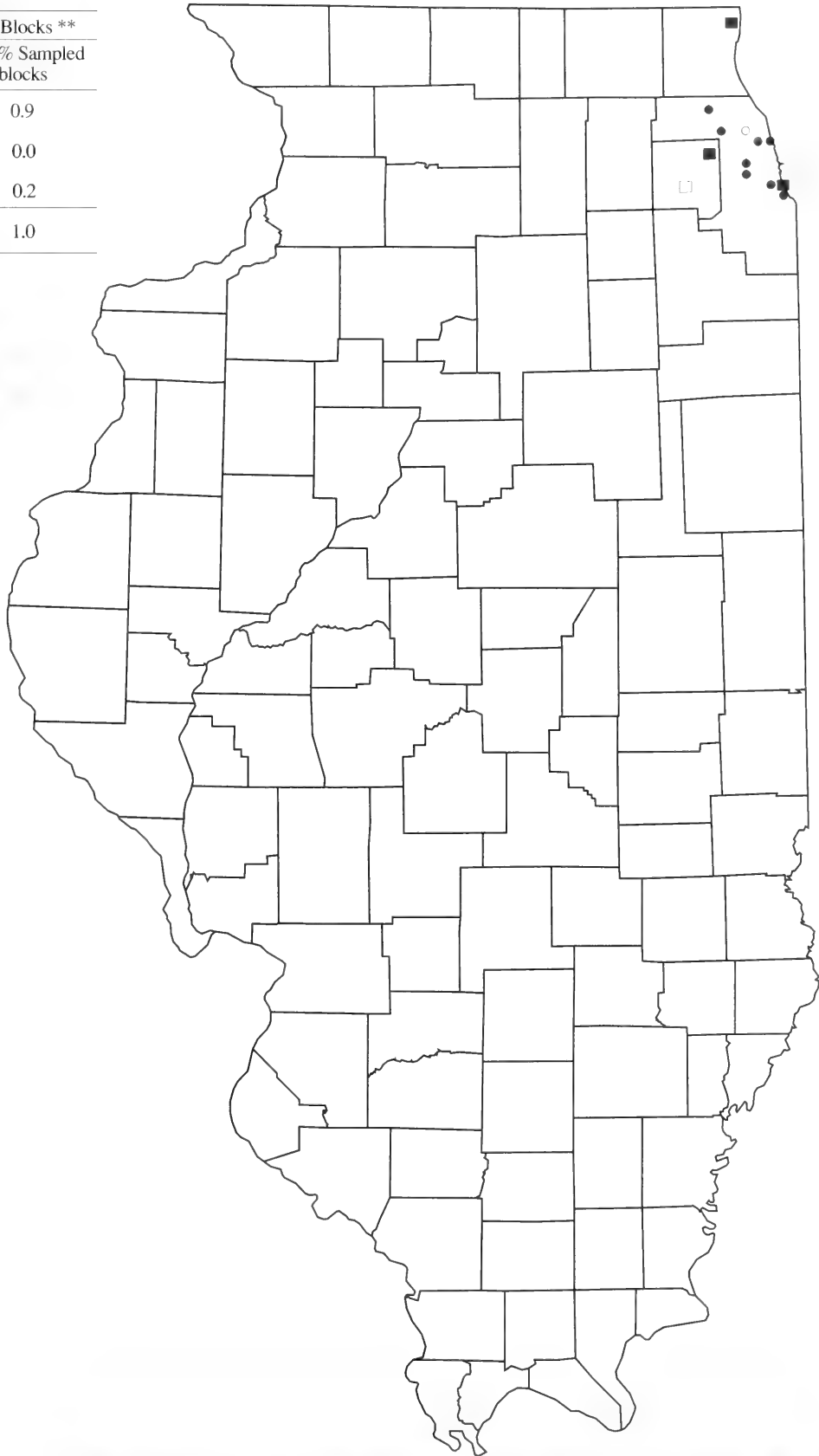


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Monk Parakeet**





Peter Dring

## Illinois History

During the mid-to-late 1800s and early 1900s, the Black-billed Cuckoo was a common summer resident in northern Illinois and considerably less common in the southern portion of the state (Ridgway 1889; Cory 1909). During the first half of the twentieth century, it was a fairly common summer resident in the Chicago region (Ford 1956) and in central Illinois, but rare in the south (Smith and Parmalee 1955). Graber and Graber (1963) reported that the Black-billed Cuckoo was primarily a northern species and that the Yellow-billed outnumbered it statewide by a ratio of 14 to 1 in the 1950s. From the early 1900s, loss of nesting habitat, such as orchards, hedgerows, and shrubby field boundaries, has negatively impacted the Black-billed Cuckoo population (Graber and Graber 1963).

## Breeding Bird Survey Trends

The trend estimate for the population of the Black-billed Cuckoo is -3.6% per year (nonsignificant,  $P = 0.32$ ) from 1966 to 2000. For the upper Midwest the trend is estimated at -1.3% per year (nonsignificant,  $P = 0.07$ ) for the same period. An annual increase of 7.4% (significant,  $P < 0.01$ ) from 1966 to 1979 was followed by an annual decrease of -2.9% (significant,  $P < 0.01$ ) from 1980 to 2000 in the upper Midwest.

*Credibility Index: IL = 2 and UM = 2.*

## Distribution

Atlas data indicate that the Black-billed Cuckoo was present throughout the state with frequency decreasing from north to south. It was reported in priority blocks in 63 counties. This species was Confirmed as nesting as far south as Union and Jackson counties.

## Frequency

The Black-billed Cuckoo was reported from 211 (21.1%) priority blocks and 66 nonpriority blocks. Breeding was Confirmed in 39 (3.9%) of the priority blocks, with the most commonly used evidence being adults feeding young (20 FY records). The rate of confirmation (i.e., 39 of 211 blocks, or 18%) is relatively low. Since these cuckoos are still migrating during the first half of June and many records were of calling birds heard on only one day in early June, some Possible records may have been migrating birds, especially in southern Illinois. Therefore, Probable and Confirmed records may provide a more reliable picture of their actual breeding distribution in Illinois. Because of its secrecy during the nesting season, the Black-billed Cuckoo is almost always detected first by its call, which is very similar to that of the Yellow-billed Cuckoo. Atlasers were urged to identify the Black-billed Cuckoo visually as well as by sound to reduce misidentifications.

## Code: BBCU

**Rangewide Distribution:** southeastern Canada and U.S. east of the Rockies, south to northwestern South America.

## ILLINOIS

**Abundance:** uncommon migrant, uncommon summer resident in north, decreasing southward.

**Endangered/Threatened Status:** none

**Breeding Habitat:** forest edges, open woodlands and thickets, shrublands.

**Nest:** a flimsy platform of sticks and twigs lined with ferns, grass, roots, etc., near the trunk of a tree.

**Eggs:** 2-3, blue-green, usually unmarked.

**Incubation:** 10-13 days.

**Fledging:** from 7 to 9 days.

The Black-billed Cuckoo is a secretive and elusive woodland bird. It nests in forest edges, thickets, and groves of trees and nests are concealed in trees, bushes, or vines. It is frequently confused with and more difficult to detect than the more common Yellow-billed Cuckoo. The Black-billed tends to occur in the older, more wooded side of woodland edges, and is less likely to be found near suburbia than the Yellow-billed Cuckoo. Cuckoos are notoriously late and variable in completing their spring migration. Cyclic population fluctuations are common for cuckoos (Jackson et al. 1996). The main food of cuckoos is large insects, especially caterpillars, and their populations may fluctuate in response to caterpillar abundance (Hughes 2001). Black-billed Cuckoos breed primarily in southern Canada and the northern two-thirds of the U.S. from Montana to the east coast. In North America, Black-billed Cuckoos were formerly much more common; population densities have declined since the early 1900s, especially in the past 20 or so years (Hughes 2001).

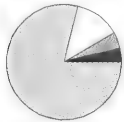


## Breeding Evidence

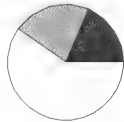
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	39	3.9	18.5	60	4.7
Probable	46	4.6	21.8	61	4.7
Possible	126	12.6	59.7	156	12.1
Totals	211	21.1	100.0	277	21.5

\* 998 priority blocks

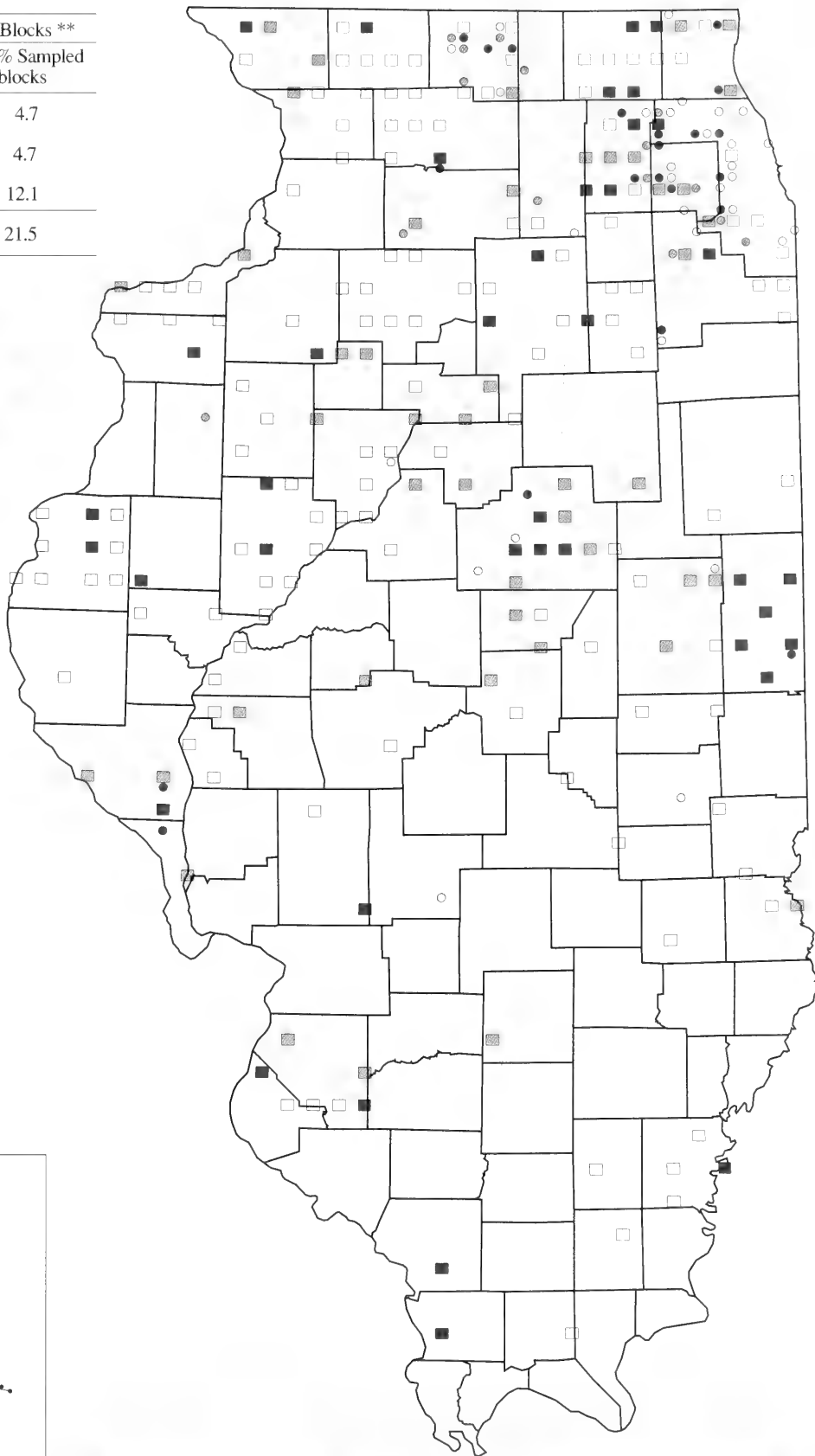
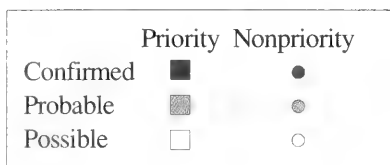
\*\* 1,286 total blocks (priority and nonpriority)



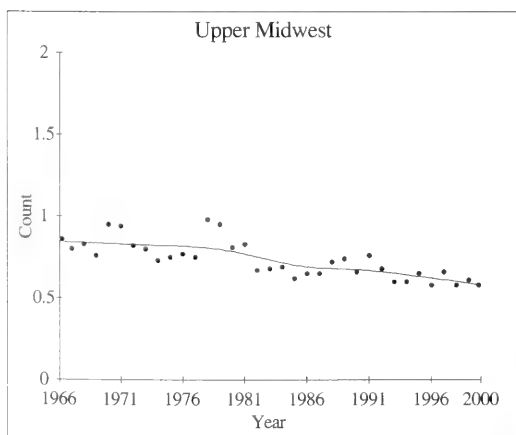
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Black-billed Cuckoo**



Richard Day / Daybreak Imagery

## Code: YBCU

**Rangewide Distribution:** eastern, central, and southwestern U.S., south to central South America.

## ILLINOIS

**Abundance:** common migrant and summer resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open and riparian woodlands with dense undergrowth and thickets.

**Nest:** a flimsy platform of sticks and twigs lined with rootlets and dried leaves, in tree or shrub.

**Eggs:** 4, light blue (fading to light greenish yellow), unmarked.

**Incubation:** 9–11 days.

**Fledging:** about 7 or 8 days.

The Yellow-billed Cuckoo, a fairly large bird with a long tail, generally stays out of sight in dense vegetation and is more often heard than seen. Its distinctive calls commonly heard from May to July have generated nicknames like Rain Crow and Cow-cow. The Yellow-billed occurs most commonly in open to semi-open woodlands with areas of dense brushy undergrowth. Nests are most commonly placed in thick brushy areas, including hedgerows, roadsides, and riparian areas but are also found in backyards, parks, and orchards. Natural population fluctuations are common for cuckoos, many times coinciding with the abundance of caterpillars, their principal food (Jackson et al. 1996). Cuckoos are valued because they eat noxious species such as tent caterpillars. In North America their breeding range includes most of the central and eastern U.S., and the southwest U.S. and

northern Mexico. They are generally common in the Southeast and less abundant elsewhere (Hughes 1999). Populations of Yellow-billed Cuckoos are greatly declining throughout their entire breeding range (Hughes 1999).

## Illinois History

Throughout its recorded history, the Yellow-billed Cuckoo has been a common summer resident throughout the state (Cory 1909) but more common in the south than in the north (Ridgway 1889; Graber and Graber 1963). Graber and Graber (1963) noted a significant population decline between the censuses of 1909 and 1957. The loss of orchards and shrubby hedgerows and roadsides coincided with the decline of the Yellow-billed population. The Yellow-billed is more common than the Black-billed Cuckoo in Illinois. In the late 1950s Yellow-billed Cuckoos outnumbered the closely related Black-billed Cuckoo during the breeding season by a ratio of 14 to 1 (Graber and Graber 1963). During the atlas project, the Yellow-billed was found in 778 priority blocks compared to 211 for the Black-billed Cuckoo.

## Breeding Bird Survey Trends

BBS data from 1966 to 2000 indicate population declines at annual rates of  $-2.9\%$  (significant,  $P < 0.01$ ) for Illinois and  $-2.5\%$  for the upper Midwest (significant,  $P < 0.01$ ). Trend estimates indicated increasing populations for 1966–1979 for Illinois and the upper Midwest at annual rates of  $6.1\%$  (significant,  $P = 0.02$ ) and  $5.2\%$  (significant,  $P < 0.01$ ), respectively. During 1980 to 2000, the populations declined in the state and the region at  $-3.4\%$  per year (significant,  $P = 0.04$ ) and  $-3.6\%$  per year (significant,  $P < 0.01$ ), respectively. *Credibility Index:*  $IL = 2$  and  $UM = 2$ .

## Distribution

The Yellow-billed Cuckoo was reported from priority blocks in every county in the state during the atlas project. It was reported most frequently from priority blocks in the southern and central regions. The current distribution is similar to that of a century ago.

## Frequency

The Yellow-billed Cuckoo was reported from 778 (78.0%) priority blocks and 88 nonpriority blocks. Breeding was Confirmed in 211 (21.1%) of the priority blocks, with adults feeding young being the most frequently used evidence of breeding (108 FY records). Like the rarer Black-billed Cuckoo, the Yellow-billed Cuckoos are still migrating during the first two weeks of June (Peterjohn 1989). Since many records were of calling birds heard on only one day in early June, some Possible records may have been migrating birds, especially in southern Illinois. Therefore, Probable and Confirmed records may provide a more realistic picture of their actual breeding distribution in Illinois.

## Breeding Evidence

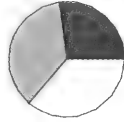
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	211	21.1	27.1	231	18.0
Probable	285	28.6	36.6	319	24.8
Possible	282	28.3	36.2	316	24.6
Totals	778	78.0	100.0	866	67.3

\* 998 priority blocks

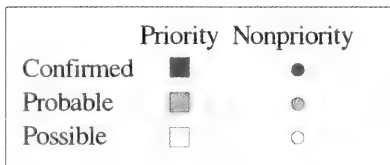
\*\* 1,286 total blocks (priority and nonpriority)



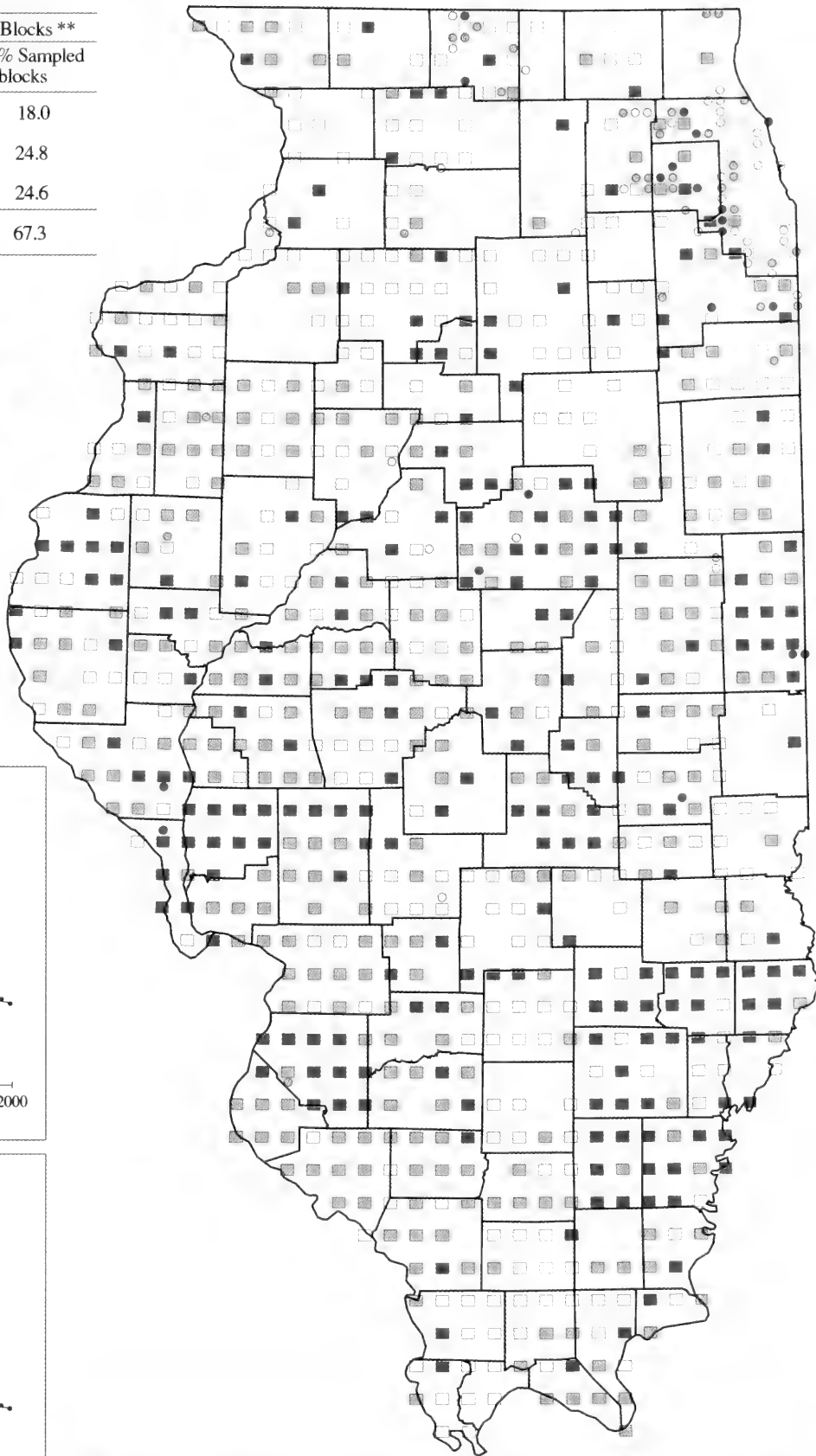
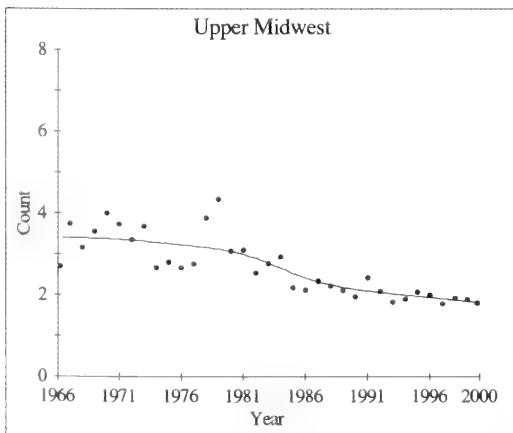
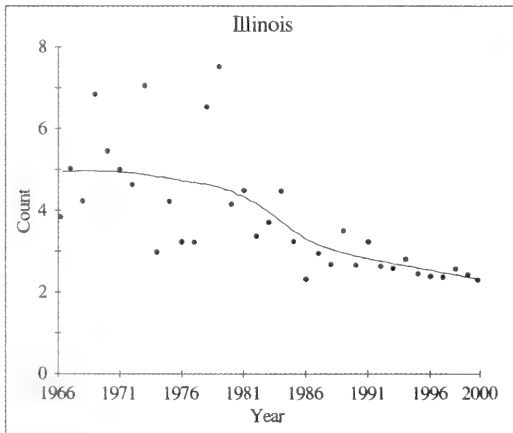
% of 998 sampled priority blocks (gray = no records for this species)



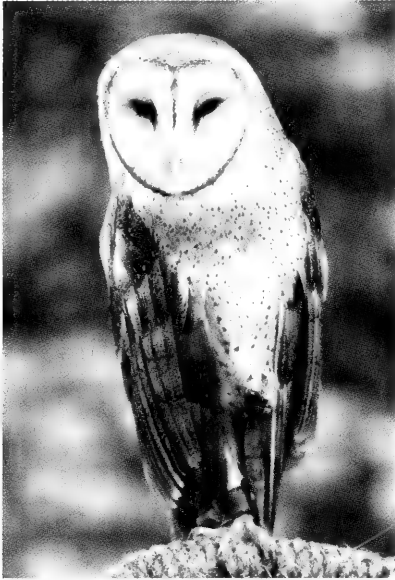
% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Yellow-billed Cuckoo**



Dennis Oehmke

**Code:** BNOW

**Rangewide Distribution:** worldwide; most of the U.S., to southern South America.

**ILLINOIS**

**Abundance:** very rare migrant, summer resident and winter resident.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** grasslands and meadows near hollow trees or barns, silos, and other man-made structures.

**Nest:** in tree cavity, nest box, or on an undisturbed, elevated area inside a building, occasionally lined with wood chips, sticks, or straw.

**Eggs:** 5–7, white, often nest-stained.

**Incubation:** 30–34 days.

**Fledging:** from 52 to 56 days.

Barn Owls are among the most widely distributed land birds and are found nearly worldwide (Marti 1992). In North America they breed from the northern states to Central America, including most of the U.S. Since they are nocturnal and secretive, few are encountered. These birds, sometimes referred to as monkey-faced owls, occur most commonly in open grasslands, meadows, and hayfields and use hollow trees, silos, or farm buildings for nesting and roosting. In addition to tree cavities they readily accept nest boxes when

available. Barn Owls hunt mostly at night, flying low in open habitats. Their main food is small mammals. Their nesting success and the number of young raised is dependent upon the availability of an adequate rodent supply, especially voles (Marti 1992). Barn Owl populations are healthy in some areas but have declined in others. Drastic population declines in the Midwest in the past half-century have been caused by changing agricultural practices that have decreased available nesting sites, small mammal populations, and grasslands for foraging (Marti 1992; Jackson et al. 1996).

**Illinois History**

The Barn Owl may have been a locally common species in Illinois in the 1800s (Ridgway 1889). By the early 1900s it was described as a casual occurrence in the north and a suspected regular breeder in the south (Cory 1909). The greatest abundance of Barn Owls in the Midwest occurred during the early 1900s (Colvin 1985). In the early 1950s Smith and Parmalee (1955) recorded it as an uncommon permanent resident. Prior to the 1960s it occurred in nearly every small town and on some farms (Bohlen 1989). The population has since plummeted due to changes in farming practices. Because of its reduced population and the decreased availability of nesting and foraging habitats, the Barn Owl is listed as an endangered species in Illinois.

**Breeding Bird Survey Trends**

Owls in general are not adequately sampled by the BBS and this rare and localized species is no exception. There are insufficient BBS data to estimate trends for this species. *Credibility Index:* IL = none and UM = none.

**Distribution**

The Barn Owl was reported from priority blocks in four counties during the atlas project. The known population has been modestly increasing in numbers and distribution since the atlas project and it has recently been reported as a Confirmed breeder in Pulaski, Union, Jasper, Christian, and Pike counties. Some birds stay in southern Illinois throughout the year; however, most either migrate or move seasonally.

**Frequency**

The Barn Owl was reported from four (0.4%) priority blocks and no nonpriority blocks. Breeding was Confirmed in one priority block (a nest with young in Pulaski County). Since Barn Owls are nocturnal, rare, and very secretive, they are a challenge to find and document. This species is undoubtedly underrepresented by the atlas data.

## Breeding Evidence

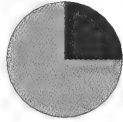
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	25.0	1	0.1
Probable	3	0.3	75.0	3	0.2
Possible	0	0.0	0.0	0	0.0
Totals	4	0.4	100.0	4	0.3

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

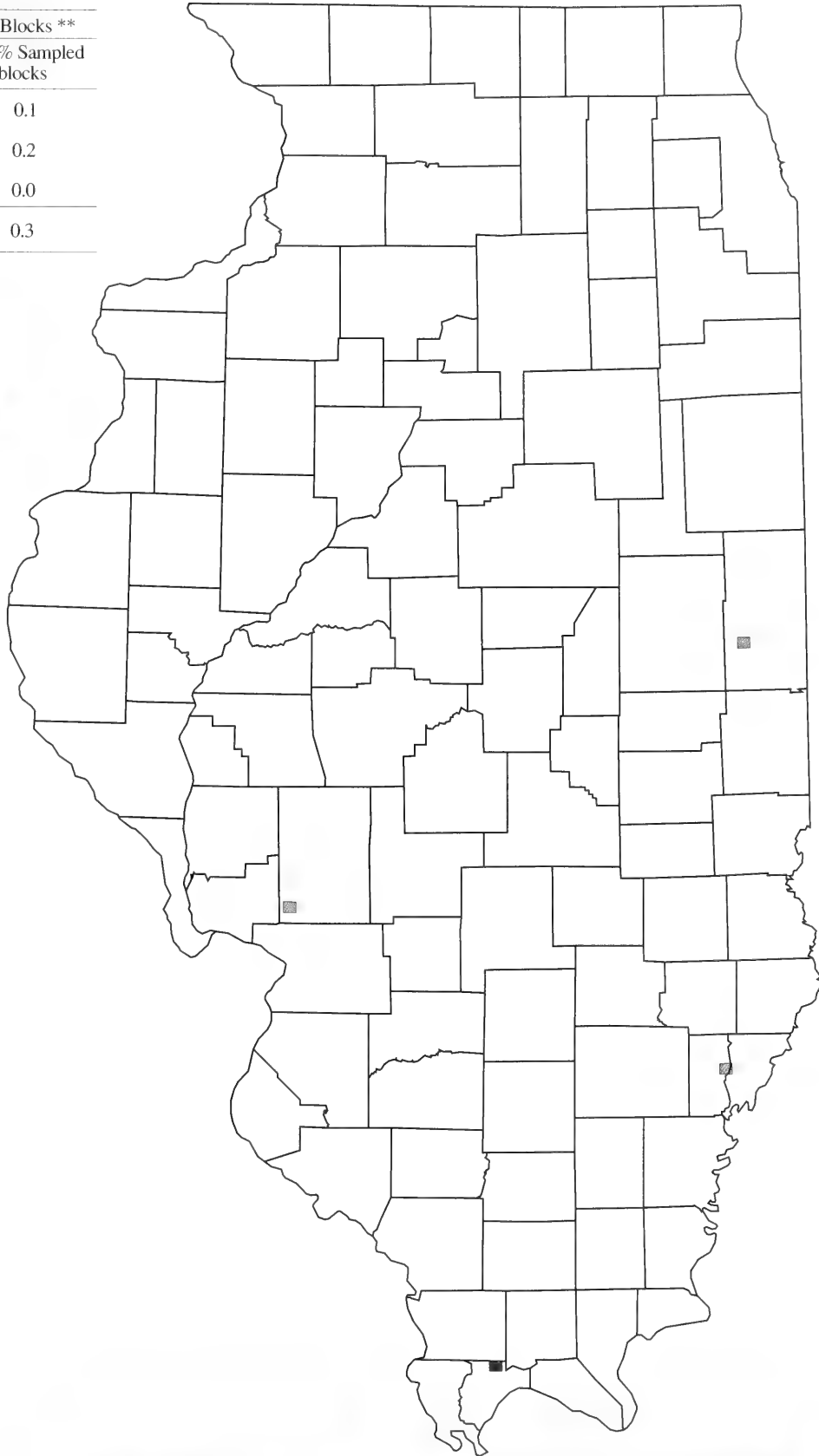


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Barn Owl**



Joe Milosevich

**Code: EASO**

**Rangewide Distribution:** extreme southeastern Canada and eastern half of U.S., south to eastern Mexico.

**ILLINOIS**

**Abundance:** common permanent resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open deciduous forests and woods, scrub, parks, towns, and riparian habitats.

**Nest:** in a tree cavity or nest box, lined with remnants of feathers, fur, or debris.

**Eggs:** 4–5, white, unmarked.

**Incubation:** 26 days.

**Fledging:** about 27 days.

Eastern Screech-Owls are permanent residents found primarily throughout the U.S. east of the Rockies and in northeastern Mexico. This small owl has two color morphs—rusty and gray. Both morphs are common in Illinois and young of both morphs may occur in the same nest. Screech-owls can be found in a wide range of habitats, including forest edges, open woodlands, urban woods, and residential areas. They have probably benefited from forest fragmentation, which has increased forest edge habitat (Jackson et al. 1996). Screech-owls use tree cavities for roosting and nesting sites but also readily accept nest boxes. Adult birds

will defend their territory and are known to attack humans (and their pets) that wander, usually unknowingly, too close to newly fledged young. Screech-owls eat small mammals, small birds, reptiles, amphibians, and insects; their diet is the most varied of North American owls (Gehlbach 1995). Because of their fondness for rodents, screech-owls are considered a highly desirable and beneficial species on the farm.

**Illinois History**

During the 1800s the Eastern Screech-Owl may have been the most abundant owl species in Illinois, according to Ridgway (1889). Up through the early 1950s it was still a common permanent resident throughout the state (Smith and Parmalee 1955). During the latter half of the twentieth century, screech-owl populations have declined.

**Breeding Bird Survey Trends**

The BBS was not designed to survey nocturnal species. Screech-owls are found on only a few BBS routes and in low numbers. The trend estimate for 1966–2000 is –3.0% per year (nonsignificant,  $P = 0.78$ ) for Illinois and 1.5% per year (nonsignificant,  $P = 0.22$ ) for the Upper Midwest.

*Credibility Index: IL = 3 and UM = 3.*

**Distribution**

The Eastern Screech-Owl was fairly commonly reported throughout the state; it was reported in priority blocks in 85 counties. The Eastern Screech-Owl was likely present in many more blocks than those reported.

**Frequency**

The Eastern Screech-Owl was reported from 326 (32.7%) priority blocks and 74 nonpriority blocks. Breeding was Confirmed in 94 (9.4%) of the priority blocks, mostly by observation of fledged young (66 FL records) and nest with young (16 NY records). The species was most easily detected by its whinnying call or cooing trill. In many instances the owls responded to human or taped imitations. In one instance an atlaser was struck in the back of the head by an owl after imitating the screech-owl call. Because of their nocturnal behavior and early breeding season, these owls were often not detected during the atlas project.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	94	9.4	28.8	139	10.8
Probable	76	7.6	23.3	90	7.0
Possible	156	15.6	47.9	171	13.3
Totals	326	32.7	100.0	400	31.1

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

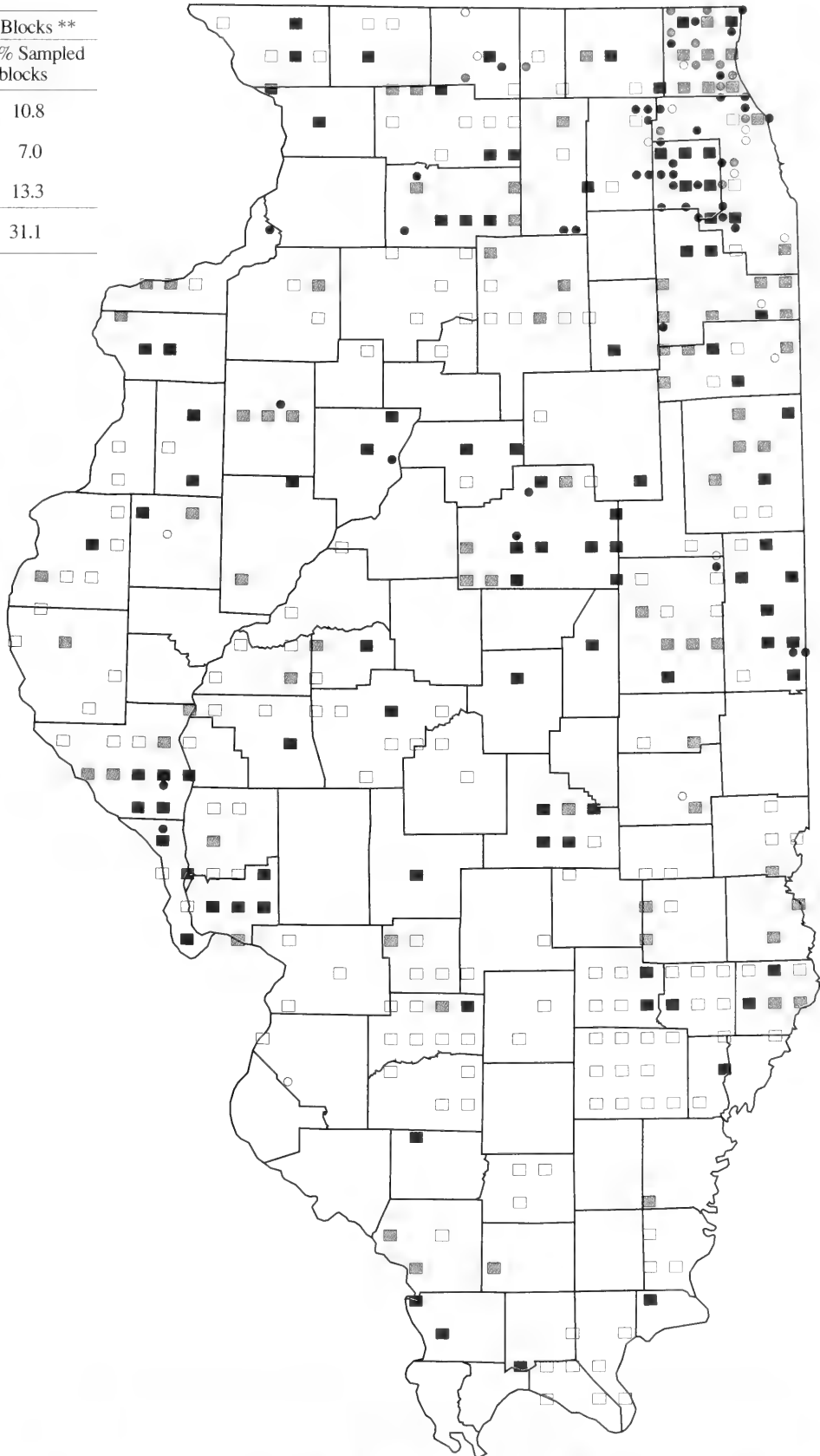


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Eastern Screech-Owl**





Dennis Oehmke

**Code:** GHOW

**Rangewide Distribution:** most of North America from northern Alaska and Canada, to southern South America.

**ILLINOIS**

**Abundance:** common permanent resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** forests, woodlands, swamps, riparian areas, parks, and residential areas.

**Nest:** abandoned nest of other species, or a gathering of sticks, bark, or rootlets lined with feathers and down; in a tree, a tree stump or on the elevated floor of an undisturbed building.

**Eggs:** 2–3, dull white, unmarked.

**Incubation:** 26–35 days (asynchronous hatching).

**Fledging:** about 35 days.

The Great Horned Owl is a large and powerful owl easily recognized, even in silhouette, by the two feather tufts on its head for which it is named. The distribution of this permanent resident is extensive—most of North America from Alaska and northern Canada to Central America and parts of South America, including all of the U.S. These owls hunt day or night but are primarily nocturnal. They often perch at dusk and dawn on the top of a tall tree, telephone pole, or the roof of a building. Their loud, resonant, low-pitched hoots can be heard for a great distance. Great Horned Owls inhabit forests and open areas with trees in rural and urban areas. This early-breeding species begins its courtship and incubates

eggs in the winter months (December and January in Illinois). Their simple nests are located in the hollow of a broken off snag or abandoned nests of other large birds or squirrels. Their diet is one of the most diverse of North American raptors and consists primarily of large prey, such as rabbits, opossums, woodchucks, skunks, squirrels, and birds, which they hunt by the perch-and-pounce method. At one time the Great Horned Owl was severely persecuted; it was afforded legal protection in the late 1940s.

**Illinois History**

During the 1800s, the Great Horned Owl was considered much less numerous than the Barred Owl and “more plentiful than the farmer or poultry raiser desires” (Ridgway 1889). By the early 1900s it was “rather common throughout heavily wooded portions of Illinois and . . . formerly quite common in the vicinity of Chicago, but now rare” (Cory 1909). In the 1950s it was an uncommon permanent resident in the Chicago region (Ford 1956) and relatively uncommon statewide (Smith and Parmalee 1955). The Great Horned Owl has once again become common statewide.

**Breeding Bird Survey Trends**

Since the BBS was not designed to survey populations of owls and other nocturnal species, trend estimates for this species may not be reliable. The trend estimates for 1966–2000 for Illinois and the upper Midwest are 3.5 (nonsignificant,  $P = 0.07$ ) and 1.1% per year (nonsignificant,  $P = 0.20$ ), respectively.

*Credibility Index:*  $IL = 2$  and  $UM = 2$ .

**Distribution**

Atlas data support the idea that the Great Horned Owl may be the most abundant and widely distributed owl in the state. This species was found in priority blocks in 93 counties. Because it is nocturnal and has an early breeding season, breeding birds were undoubtedly missed by the atlas survey and this species is probably more widespread than indicated.

**Frequency**

The Great Horned Owl was reported from 399 (40.0%) priority blocks and another 114 nonpriority blocks. Breeding was Confirmed in 117 (11.7%) of the priority blocks, mostly by observations of fledged young (86 FL records) and nest with young (16 NY records). Since Great Horned Owls begin nesting in January and the young have normally fledged by May, Confirmed breeding was underreported by the atlas project. Presumably, Great Horned Owls nested in many more blocks than indicated by the atlas data and likely nested in most blocks with Probable and Possible records.

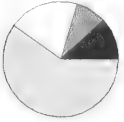


## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	117	11.7	29.3	186	14.5
Probable	86	8.6	21.6	103	8.0
Possible	196	19.6	49.1	224	17.4
Totals	399	40.0	100.0	513	39.9

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

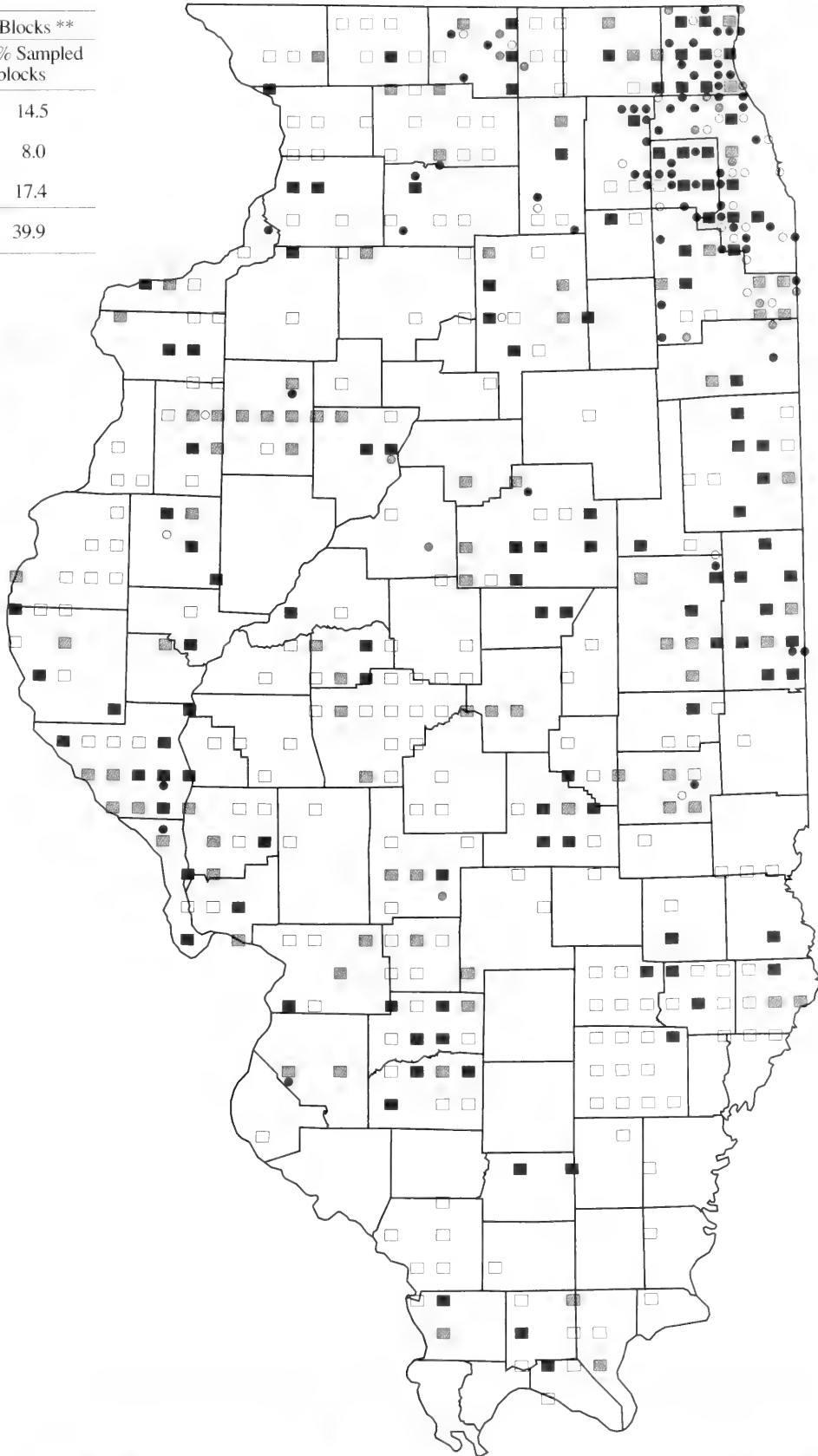


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Great Horned Owl**



Kanae Hirabayashi

**Code: BDOW**

**Rangewide Distribution:** southern Canada, eastern and northwestern U.S., parts of Mexico.

**ILLINOIS**

**Abundance:** common permanent resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** mature bottomland forests, swamps, river valleys, upland and mixed forests with ravines/streams.

**Nest:** in tree cavity, occasionally a nest box.

**Eggs:** 2–3, white, unmarked.

**Incubation:** 28–33 days.

**Fledging:** about 42 days.

This large woodland owl is distributed widely but with low density in southern Canada from the west to the east coast, the eastern half and northwest U.S., and parts of Mexico. The Barred Owl is the “hoot” owl known for its call “Who cooks for you, who cooks for you-all.” Although mostly nocturnal, it calls during daylight hours as well. This species responds readily to imitations of its call. The Barred Owl is a year-round resident that inhabits mature woods, bottomland forests, and river valleys that contain hollow trees with sizable cavities for nesting and roosting. The Barred Owl is a generalist predator with a varied diet that includes small mammals, birds, amphibians, reptiles, fish, insects, and

crayfish. Deforestation and timber harvest, which limit the availability of old-growth forest, along with forest fragmentation are threats to this species. Protection and preservation of large tracts of mature woodlands and wooded riparian areas that include dead and dying trees would benefit this species. Populations in North America have been stable or have increased in the last three decades (Mazur and James 2000).

**Illinois History**

Toward the end of the nineteenth century, the Barred Owl was “by far the most numerous species of owl in wooded portions of the state” (Ridgway 1889) and was still common at the turn of the century (Cory 1909). By the mid-1950s it was considered a fairly common permanent resident in the north and central portions of the state and probably the most common owl in the south and along the river bottoms of central Illinois (Smith and Parmalee 1955). The Barred Owl is still common in most bottomlands and swamps in Illinois.

**Breeding Bird Survey Trends**

Owls in general are not adequately sampled by the BBS. Trend estimates are 0.3% per year (nonsignificant,  $P = 0.86$ ) for Illinois and 3.4% per year (nonsignificant,  $P = 0.18$ ) for the upper Midwest for 1966–2000.

**Credibility Index:**  $IL = 3$  and  $UM = 2$ .

**Distribution**

The Barred Owl was found in most of the larger bottomland forests throughout the state during the atlas project. It was reported in priority blocks in 78 counties, but was rare in the northeast. This species is known to occur in more locations than reported during the atlas project.

**Frequency**

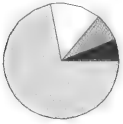
The Barred Owl was reported from 279 (28.0%) priority blocks and 33 nonpriority blocks. It was Confirmed as breeding in 60 (6.0%) of the priority blocks, most commonly by finding fledged young (51 FL records). Since Barred Owls are an early nesting species, the opportunity to confirm nesting was often missed during the atlas project. Therefore, Barred Owls probably nested in many more blocks than indicated by the atlas data. Since Barred Owl vocalizations are easily recognized and this species is not known to roam widely, the blocks with Probable and Possible records may have been nesting sites as well.

## Breeding Evidence

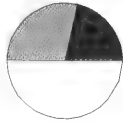
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	60	6.0	21.5	73	5.7
Probable	79	7.9	28.3	92	7.2
Possible	140	14.0	50.2	147	11.4
Totals	279	28.0	100.0	312	24.3

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

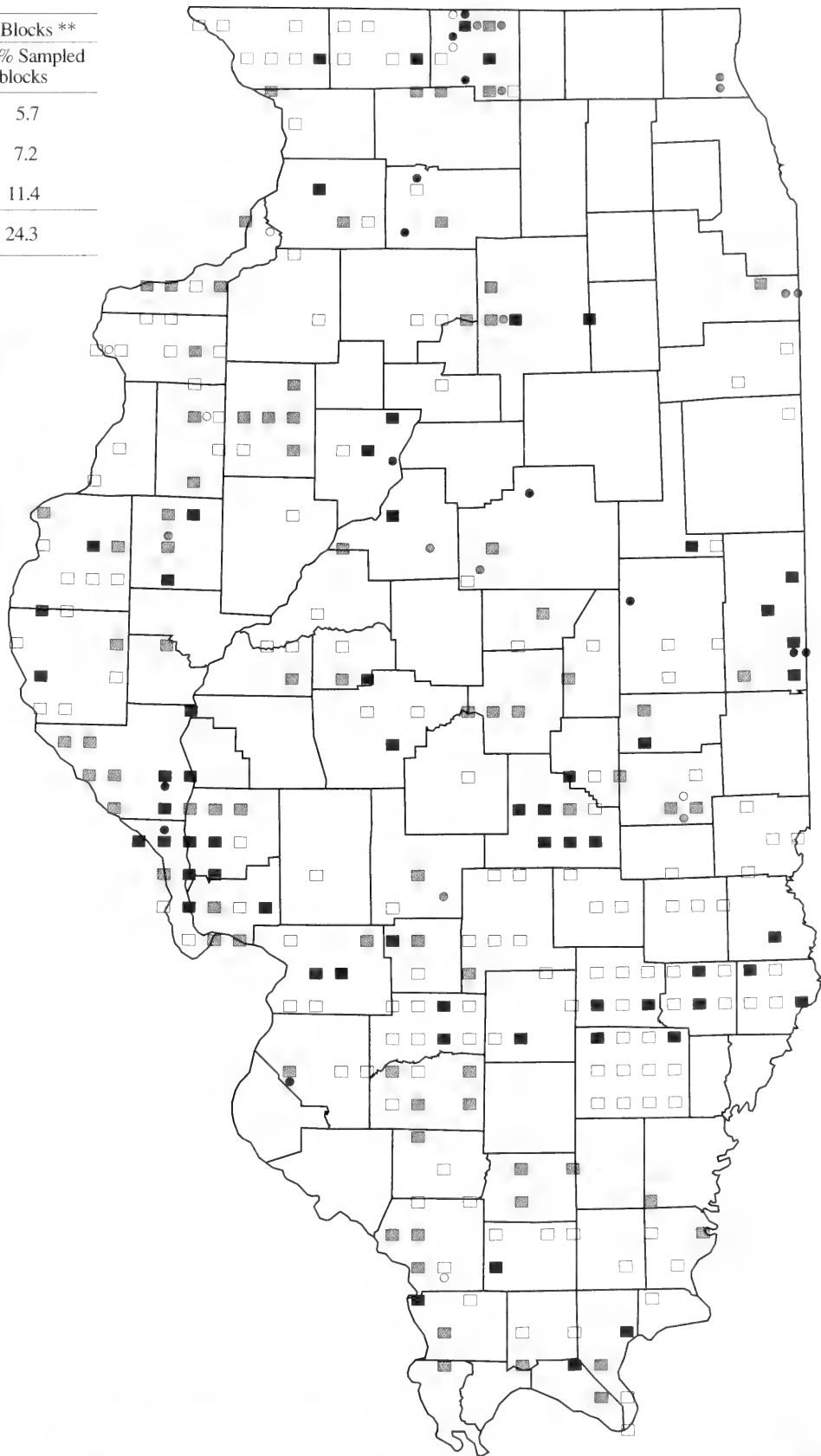


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Barred Owl**



Richard Day / Daybreak Imagery

## Code: SEOW

**Rangewide Distribution:** Europe, Asia, South America, northern Alaska and Canada, south through most of the U.S. to Central Mexico.

## ILLINOIS

**Abundance:** uncommon migrant and winter resident, rare summer resident.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** grasslands, meadows, and marshes.

**Nest:** a scrape sparsely lined with grass or weeds, on ground, concealed by low vegetation.

**Eggs:** 4–7, white to creamy white, unmarked.

**Incubation:** 26–28 days.

**Fledging:** from 31 to 36 days.

The Short-eared Owl is found nearly worldwide. In North America the breeding range is generally the western half of the continent and eastern Canada. Since it inhabits open areas and sometimes hunts during daytime, it is one of the more visible owl species. This nomadic species requires large grasslands, marshes, and wetlands with plentiful small rodent populations (Holt and Leasure 1993). Northern Harriers often occur at the same sites but they are rarely serious competitors for prey since the short-eared is most active during the hours around dusk and dawn. Nesting takes place early in the season. Short-eared Owls are ground nesters and nest mostly in grasslands. Populations have declined in many areas of North America, especially in the northeastern U.S. (Holt and Leasure 1993). Elimination of grassland habitat has been a key factor in population declines and preservation, restoration, and proper management of large grassland tracts are critical to the Short-eared Owl

population. Areas enrolled in the Conservation Reserve Program appear to have enhanced Short-eared Owl habitation in Missouri (Jacobs and Wilson 1997). Reclaimed strip mines may also provide additional habitat for this species.

## Illinois History

During the 1800s, the Short-eared Owl was “the most abundant species of the family . . . common everywhere, on prairies and marshes, during the winter” (Nelson 1876). Ridgway (1889) stated that it occurs “in all open grassy situations, either as a winter visitant or resident, and is particularly common on the prairies.” Cory (1909) noted that it was common in spring and fall and a “not uncommon resident throughout the year.” By the 1950s it was an irregular migrant in the south and an uncommon permanent resident in the central and northern zones of Illinois (Smith and Parmalee 1955). With the disappearance of native grassland and wetland habitats, the breeding population in Illinois has become extremely scarce. In 1990 Short-eared Owls nested at five locations in the state, the first documented nestings since 1973 (Herkert 1992). The Short-eared Owl is listed as an endangered species in Illinois.

## Breeding Bird Survey Trends

There are insufficient BBS data for Illinois to estimate reliable population trends for this rare and localized species. The trend estimate is 13.6% per year (significant,  $P = 0.03$ ) from 1966 to 2000 for the upper Midwest; sample size and relative abundance are low.

*Credibility Index: IL = none and UM = 3.*

## Distribution

Once a fairly common breeding species in the prairies, the Short-eared Owl is now a rare breeder in Illinois. It was reported in priority blocks in Vermilion and Shelby counties and a nonpriority block in Pike County during the atlas project. Herkert (1992) reported that the species also nested in Lee, McLean, Jasper, and Marion counties during the atlas project period. The nomadic Short-eared Owls are found in areas with abundant prey and could occur where large tracts of grassland are available, such as Midewin National Tallgrass Prairie in Will County and Prairie Ridge State Natural Area in Jasper and Marion counties.

## Frequency

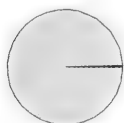
The Short-eared Owl was reported from four (0.4%) priority blocks and one nonpriority block. Breeding was Confirmed in two of the priority blocks (adjacent blocks in Vermilion County). Because of their crepuscular activity, Short-eared Owls could have been missed easily during the atlas project.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	2	0.2	50.0	2	0.2
Probable	0	0.0	0.0	1	0.1
Possible	2	0.2	50.0	2	0.2
Totals	4	0.4	100.0	5	0.4

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

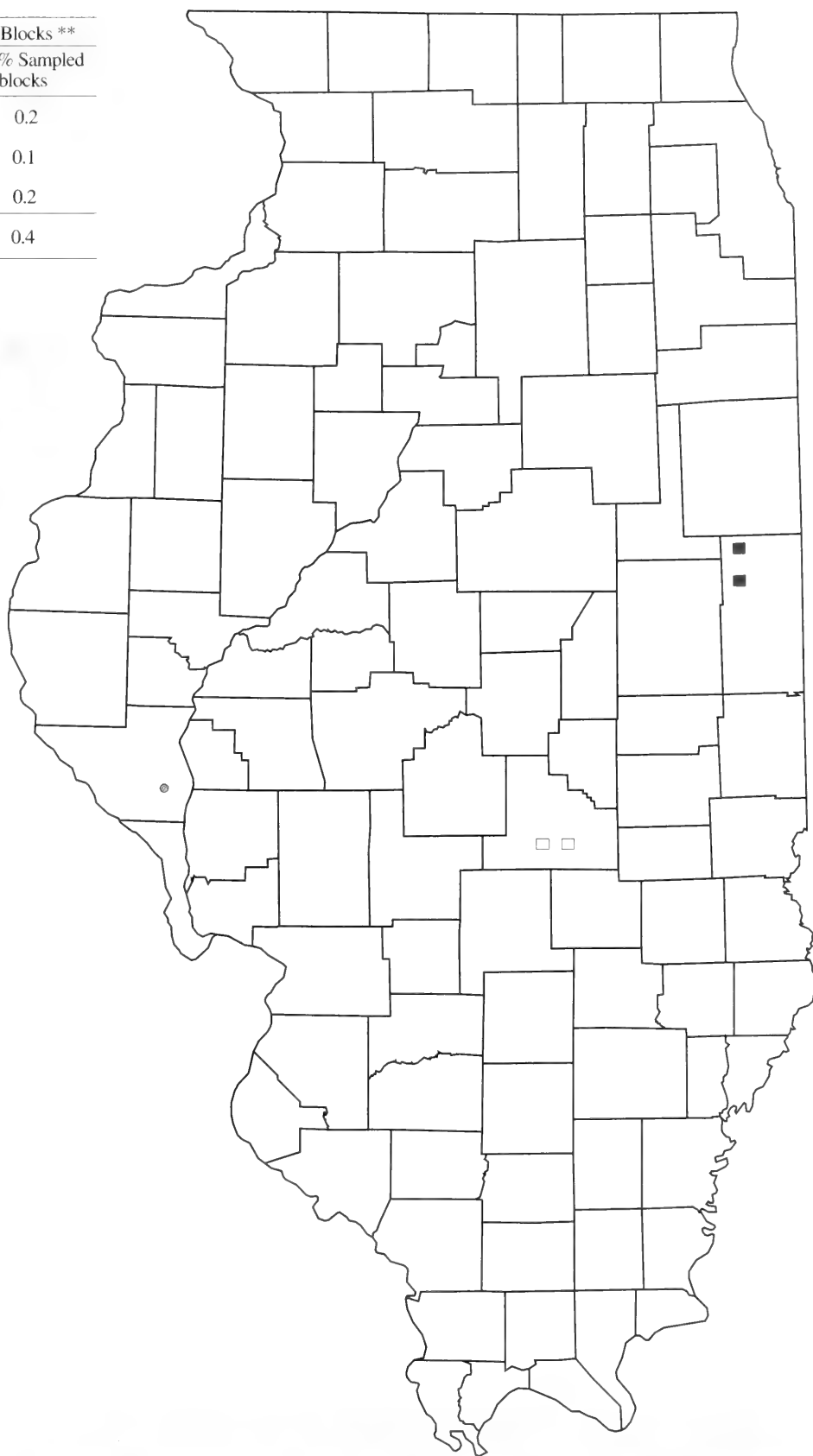


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Short-eared Owl**



Gary Herren

## Code: CONI

**Rangewide Distribution:** southern half of Canada, south through most of the U.S. to northern Argentina.

## ILLINOIS

**Abundance:** common migrant and fairly common summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open and semi-open areas with little vegetation, and cities on flat-roofed buildings.

**Nest:** a depression on flat ground or on flat, graveled rooftop.

**Eggs:** 2, white to olive, with olive mottling.

**Incubation:** 19 days.

**Fledging:** about 21 days.

The Common Nighthawk, colloquially known as bullbat, breeds throughout most of the U.S. and southern Canada and in parts of Mexico and Central America. Historically, it was known as a species of the open country that nested on areas of bare ground with unobstructed visibility. Although it still occurs in natural settings, Common Nighthawks are now found in urban areas and have adopted flat, gravel-topped roofs as their new, predator-free nesting habitat. The first record of rooftop nesting occurred in 1869 (Gross 1940). During the breeding season, nighthawks can be heard or seen any time of the day or night but are most active around dusk when they are in search of flying insects. Nighthawks feed

exclusively on insects taken on the wing. Early in the breeding season the nighthawk produces a distinctive booming sound during its courtship flight. At other times its call is a nasal-like "zeep." Nighthawks often sit in trees, perching parallel to the branches because their feet are too small and weak to grip the branches. This behavior and their cryptic plumage help to conceal them.

## Illinois History

The Common Nighthawk has historically been a common summer resident throughout the state (Cory 1909; Smith and Parmalee 1955). It is now most commonly reported from cities and towns where flat-topped roofs are available. Armstrong (1965) and Wedgwood (1973) suggest that the density of flat roofs is an important factor in selection of urban home ranges.

## Breeding Bird Survey Trends

The trend estimates for 1966–2000 for Illinois and the upper Midwest are –9.9% per year (nonsignificant,  $P = 0.10$ ) and –1.3% per year (nonsignificant,  $P = 0.52$ ), respectively. This crepuscular species is not adequately sampled by the BBS. *Credibility Index: IL = 3 and UM = 2.*

## Distribution

The Common Nighthawk was evenly distributed throughout the state during the atlas project and was reported in priority blocks in 77 counties. At present, it is most frequently encountered in cities and towns where the lights attract flying insects and flat, gravel-topped roofs provide nesting habitat. Since most cities and towns were outside of priority blocks, Common Nighthawks were probably underrepresented in the atlas data. The absence of records from the southern tip of the state is puzzling and may be a result of insufficient sampling in this region.

## Frequency

The Common Nighthawk was reported from 233 (23.3%) priority blocks and 73 nonpriority blocks. Breeding was Confirmed in 31 (3.1%) of the priority blocks. Due to the inaccessibility of their rooftop nesting sites, confirmation of breeding was difficult. It was Confirmed in only 13% of the 233 priority blocks in which it was recorded, which is among the lowest rates of confirmation for species reported in more than 10 priority blocks. Common Nighthawks probably nested in most blocks where they were reported.

## Breeding Evidence

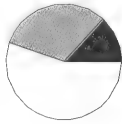
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	31	3.1	13.3	43	3.3
Probable	73	7.3	31.3	93	7.2
Possible	129	12.9	55.4	170	13.2
Totals	233	23.3	100.0	306	23.8

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

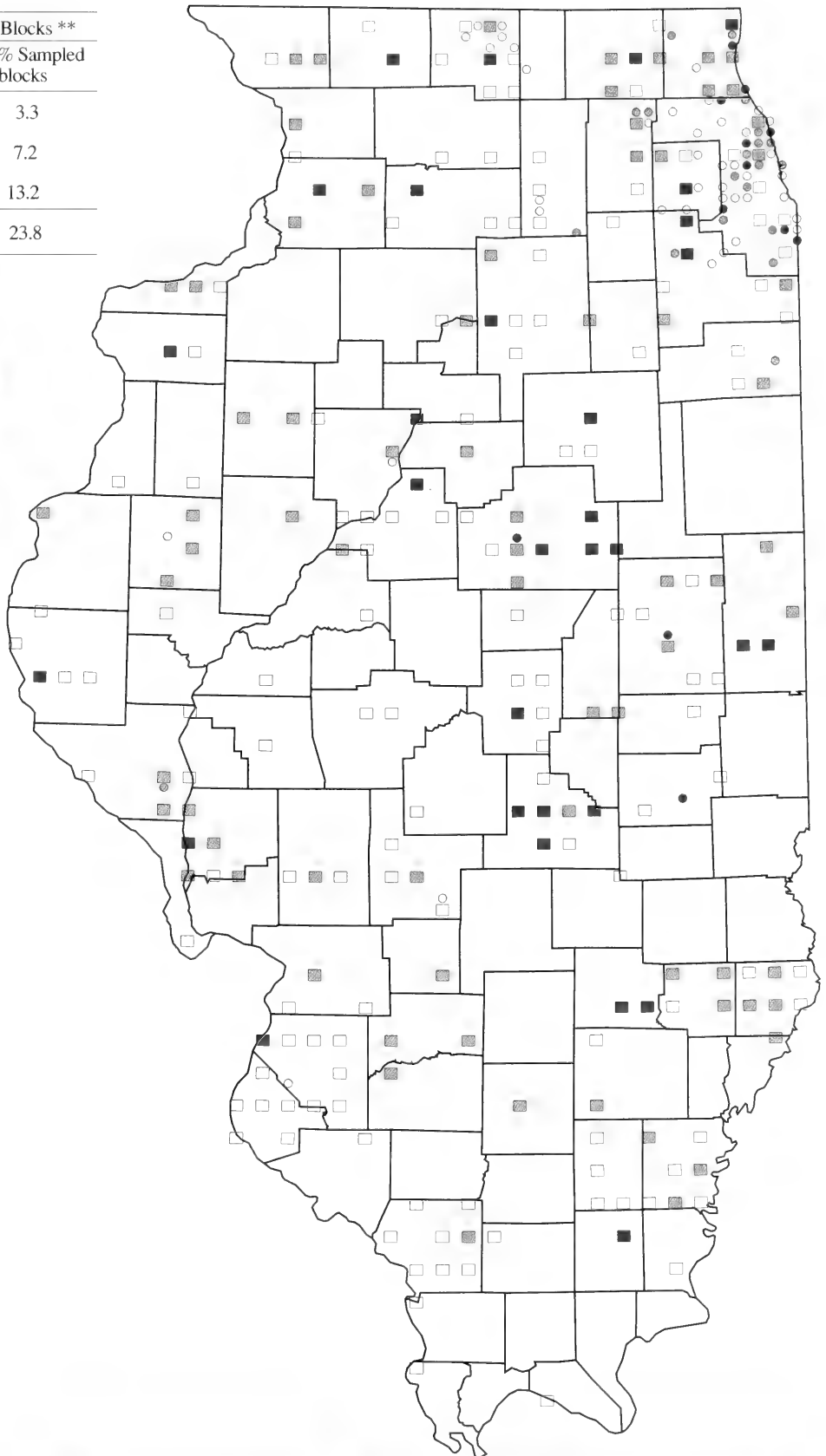


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Common Nighthawk**





Todd Fink / Daybreak Imagery

**Code:** CWWI

**Rangewide Distribution:** southeastern U.S., south through Central America to northern South America.

**ILLINOIS**

**Abundance:** uncommon migrant and summer resident in south, very rare and local in central part of the state.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open pine-oak woodlands and deciduous forest edges, especially uplands.

**Nest:** none; on ground, uses same dead-leaf area each year.

**Eggs:** 2, variable colors but mostly white, cream, or pinkish with brownish or purplish gray mottling.

**Incubation:** 20+ days.

**Fledging:** about 17 days.

This nocturnal woodland species breeds mainly in the southern U.S. from the Atlantic states to Texas and Oklahoma. At night during the breeding season it repeats its name over and over again. Although the Chuck-will's-widow and Whip-poor-will occur in the same areas and can be heard at the same time, the Chuck prefers drier, more open woodlands, including savannas, barrens-like areas, and forest edges. It is rarely seen because its cryptic plumage camouflages the bird on a tree limb or the forest floor. Nests are

placed in the leaf litter on the forest floor in dense brushy cover. Chuck-will's-widows feed at night, flying low to the ground and using their large funnellike mouth to capture flying insects. Little is known about the life history, habitat requirements, or population trends of the Chuck-will's-widow or Whip-poor-will because their cryptic coloration and nocturnal habits make them difficult to study.

**Illinois History**

In the 1800s the Chuck-will's-widow was "not uncommon" as far north as Wabash County (Ridgway 1889). Its current distribution is comparable to that of a century ago. Presently the Chuck-will's-widow, which is the largest nightjar species in Illinois, is uncommon outside of the three southernmost tiers of counties.

**Breeding Bird Survey Trends**

As with other nocturnal species, the BBS is not an adequate survey for determining population status. From 1966 to 2000 the population trend in Illinois is estimated at -16.5% (nonsignificant,  $P = 0.12$ ). The upper Midwest trend estimate is -0.9% per year (nonsignificant,  $P = 0.38$ ) for the same period.

*Credibility Index:* IL = 3 and UM = 2.

**Distribution**

The Chuck-will's-widow is primarily a southern bird. The southern tip of Illinois is at the northern limit of its breeding distribution. This species was most frequently reported from priority blocks in the southern three tiers of counties during the atlas project. However, the species has recently occurred and perhaps even bred at isolated locations as far north as southern Cook County. Calling territorial males have been reported at Sand Ridge State Forest in Mason County and near Willow Springs in Cook County.

**Frequency**

The Chuck-will's-widow was reported from 29 (2.9%) priority blocks and another 3 nonpriority blocks. It was Confirmed as breeding in 1 priority block and 1 nonpriority block. As is the case for other nocturnal and crepuscular species, the Chuck-will's-widow population may be underrepresented in the atlas data.



## Breeding Evidence

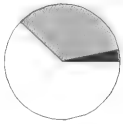
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	3.4	2	0.2
Probable	10	1.0	34.5	12	0.9
Possible	18	1.8	62.1	18	1.4
Totals	29	2.9	100.0	32	2.5

\* 998 priority blocks

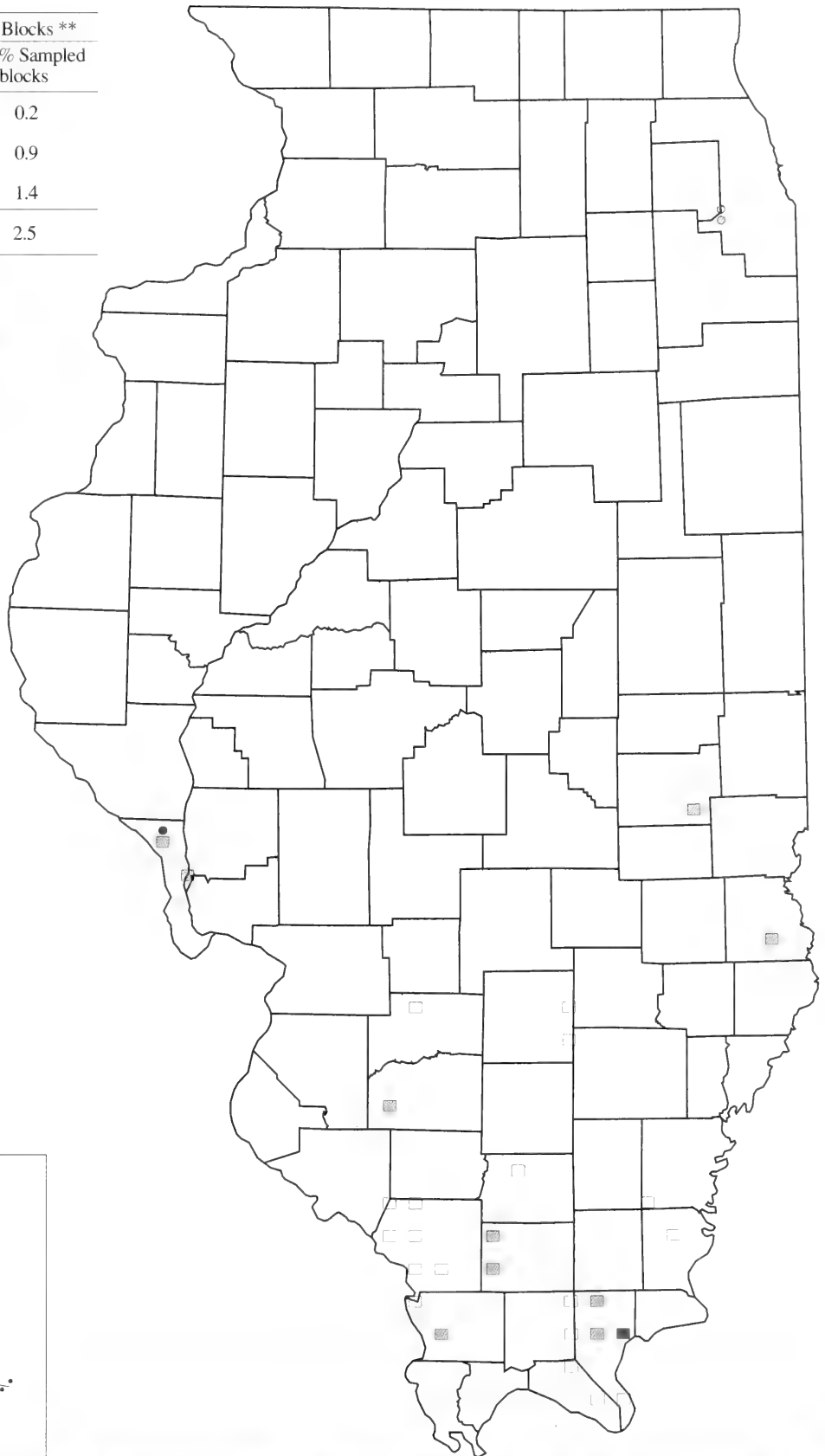
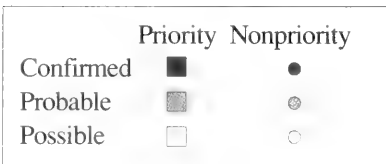
\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

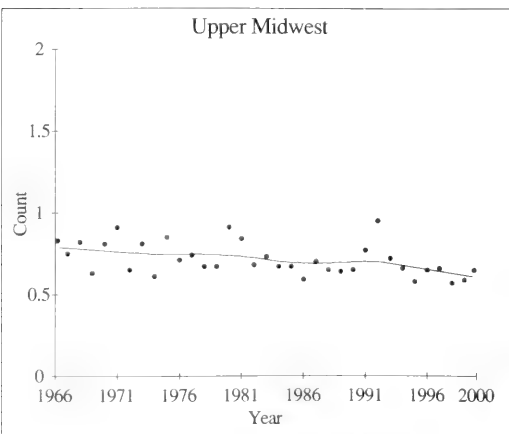


% of priority blocks with records for this species



## Breeding Bird Survey Trends

Upper Midwest



**Chuck-will's-widow**



Todd Fink / Daybreak Imagery

**Code: WPWI**

**Rangewide Distribution:** extreme southeastern Canada, eastern U.S., south through Central America.

**ILLINOIS**

**Abundance:** common migrant and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous and mixed deciduous-coniferous forests with leaf cover.

**Nest:** none; on well-drained ground near edge of woods.

**Eggs:** 2, white with brown, olive, or lavender dots.

**Incubation:** 19–20 days.

**Fledging:** about 20 days.

The Whip-poor-will is often heard but rarely seen due to its cryptic coloration and crepuscular and nocturnal foraging behavior. At dawn and dusk and occasionally all night, it repeats its name over and over again. It is uncommon in its breeding range, which is generally eastern North America from southern Canada to, but not including, the Gulf states, and parts of Mexico and Central America. Whip-poor-wills inhabit deciduous or mixed deciduous-coniferous forests with little underbrush. Unlike the larger Chuck-will's-widow, the Whip-poor-will prefers denser forests with an open understory (Cink 2002). They do not use disturbed areas or grazed woodlands, but will nest in second-growth or less-than-mature woodlands. Whip-poor-wills do not construct formal nests but simply lay their eggs on the ground in the leafy litter and rely on their cryptic plumage to avoid detection while incubating them. Their diet consists of insects captured on the wing in open areas at dawn, dusk or at night. Because of their habit of sitting along the roadside,

Whip-poor-wills are often hit by passing vehicles. As is typical of many nocturnal and crepuscular species, much information remains to be gathered for this species.

**Illinois History**

Early accounts of the Whip-poor-will in Illinois indicate that it was widely distributed throughout the state, but failed to mention how common it was. Smith and Parmalee (1955) stated that it was a common summer resident in the central and southern zones but uncommon in the north, and Ford (1956) indicated that it was fairly common in the Chicago region. Bohlen (1989) refers to it as a common summer resident throughout the state. During the latter decades of the twentieth century, the Whip-poor-will population has declined.

**Breeding Bird Survey Trends**

For 1966–2000 the trend estimate for Illinois is  $-9.6\%$  per year (nonsignificant,  $P = 0.08$ ) and for the upper Midwest it is  $-2.5\%$  per year (significant,  $P = 0.02$ ). BBS data are not adequate for estimating population trends for crepuscular or nocturnal species such as the Whip-poor-will.

*Credibility Index:* IL = 3 and UM = 2.

**Distribution**

During the atlas project, Whip-poor-wills were mostly found in southern and western Illinois, where forest cover is more extensive in the state (see Fig. 14). The lower number of priority block records in the eastern and northwestern regions may be related to the generally smaller and more fragmented forests and the more extensive agricultural land use in those parts of the state. In southern Illinois, Whip-poor-wills coexist with the Chuck-will's-widow but they prefer different habitats.

**Frequency**

The Whip-poor-will was reported from 259 (26.0%) priority blocks and 21 nonpriority blocks. Breeding was Confirmed in 14 of the priority blocks. It was Confirmed in only 5% of the 259 priority blocks in which it was recorded, which is among the lowest rates of confirmation for species reported in more than 10 priority blocks. Breeding evidence for Confirmed records in priority blocks consisted of distraction display (5 DD records), fledged young (4 FL records), nest with eggs (4 NE records), and adults feeding young (1 FY record). It is likely that nesting occurred in the majority of the blocks in which they were heard. As with other nocturnal and crepuscular species, the atlas data may not accurately reflect the actual distribution of this species in the state.

## Breeding Evidence

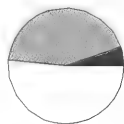
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	14	1.4	5.4	17	1.3
Probable	111	11.1	42.9	123	9.6
Possible	134	13.4	51.7	140	10.9
Totals	259	26.0	100.0	280	21.8

\* 998 priority blocks

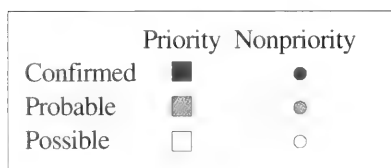
\*\* 1,286 total blocks (priority and nonpriority)



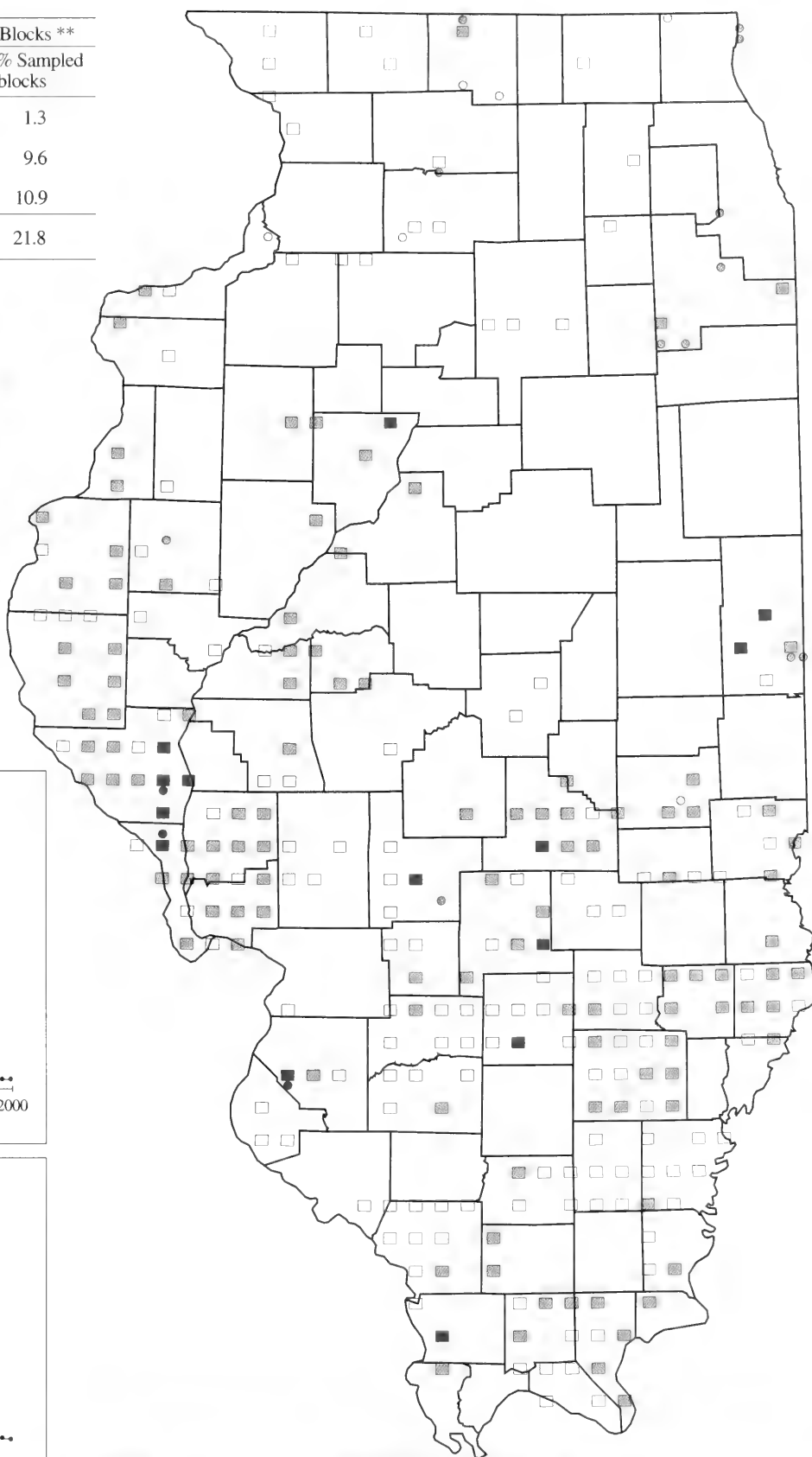
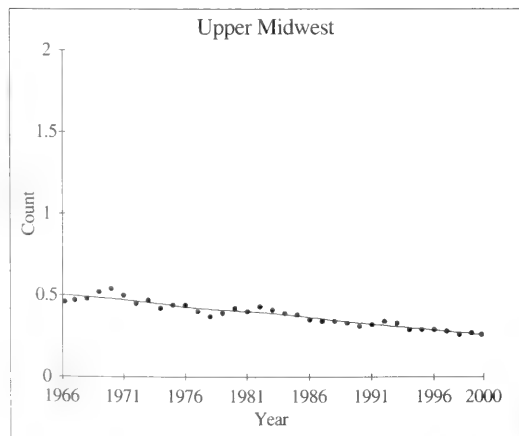
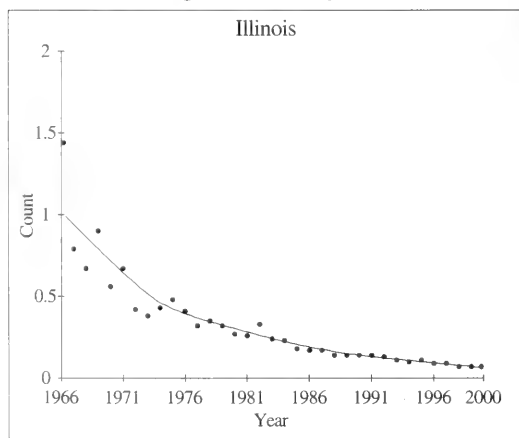
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Whip-poor-will**



Richard Day / Daybreak Imagery

**Code: CHSW**

**Range-wide Distribution:** southeastern Canada and eastern U.S., south to central South America.

**ILLINOIS**

**Abundance:** common migrant and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open areas, especially near human habitation, swamps with hollow trees, silos and airshafts.

**Nest:** half saucer of twigs and saliva attached to vertical wall of chimney or hollow tree.

**Eggs:** 4–5, white, unmarked.

**Incubation:** 19–21 days.

**Fledging:** from 28 to 30 days.

The small, fast-flying Chimney Swift, sometimes described as the “flying cigar,” is a species that has benefited from human settlement. The swifts’ dependence on hollow trees changed when they found the dark, interior walls of chimneys in homes, schools, and other buildings suitable for nesting (Cink and Collins 2002). The birds accept these substitutes in rural, suburban, and urban settings. The use of natural sites for nesting is now rare. During daylight, swifts are constantly airborne in search of flying insects. Their chattering sounds are familiar throughout the summer. Chimney Swifts breed throughout the U.S. and southern Canada east of the Rockies. They are fairly common to

common in their range; however, populations have declined throughout their range in the past few decades. The current trend of capping chimneys has reduced the number of potential nesting sites (Cink and Collins 2002).

**Illinois History**

The Chimney Swift may have become more common as Euro-American settlement took place (Grabner and Grabner 1963). By the late nineteenth century it was considered a common summer resident throughout Illinois (Ridgway 1889; Cory 1909). It continued to be common throughout the twentieth century (Smith and Parmalee 1955; Ford 1956; Grabner and Grabner 1963; Bohlen 1989), especially in areas where open chimneys and an abundant food source were readily available. Despite the prevalent use of man-made structures, Chimney Swifts have been observed to still use natural nesting sites, especially in the swamps in southern Illinois.

**Breeding Bird Survey Trends**

Populations of the Chimney Swift in both Illinois and the upper Midwest declined from 1966 to 2000. The trend estimates are  $-2.5\%$  per year (significant,  $P < 0.01$ ) for the state and  $-1.6\%$  per year (significant,  $P < 0.01$ ) for the region.

*Credibility Index: IL = 2 and UM = 2.*

**Distribution**

The Chimney Swift was a common species and reported from priority blocks in every county during the atlas project. The lack of observations in certain priority blocks may be attributed to the shortage of nesting sites, especially in the largely agricultural areas. During the atlas project, the swift was among the most frequently reported and widely distributed species in priority blocks and it likely bred in most of the blocks in which it was recorded.

**Frequency**

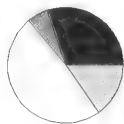
The Chimney Swift, an easy species to detect, was reported from 846 (84.8%) priority blocks and 136 nonpriority blocks. Breeding was Confirmed in 300 (30.1%) of the priority blocks; 81% of these records were confirmed by the observation of occupied nests (244 ON records).

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	300	30.1	35.5	350	27.2
Probable	59	5.9	7.0	67	5.2
Possible	487	48.8	57.6	565	43.9
Totals	846	84.8	100.0	982	76.4

\* 998 priority blocks

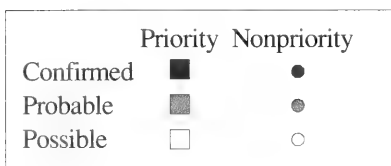
\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

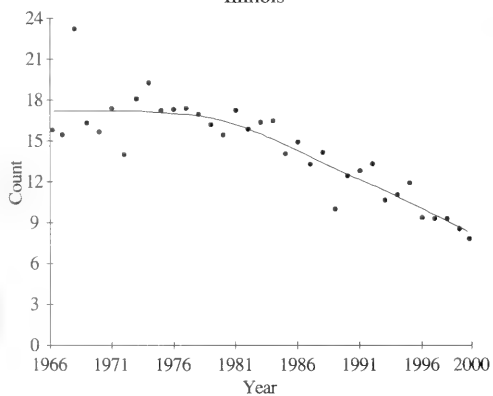


% of priority blocks with records for this species

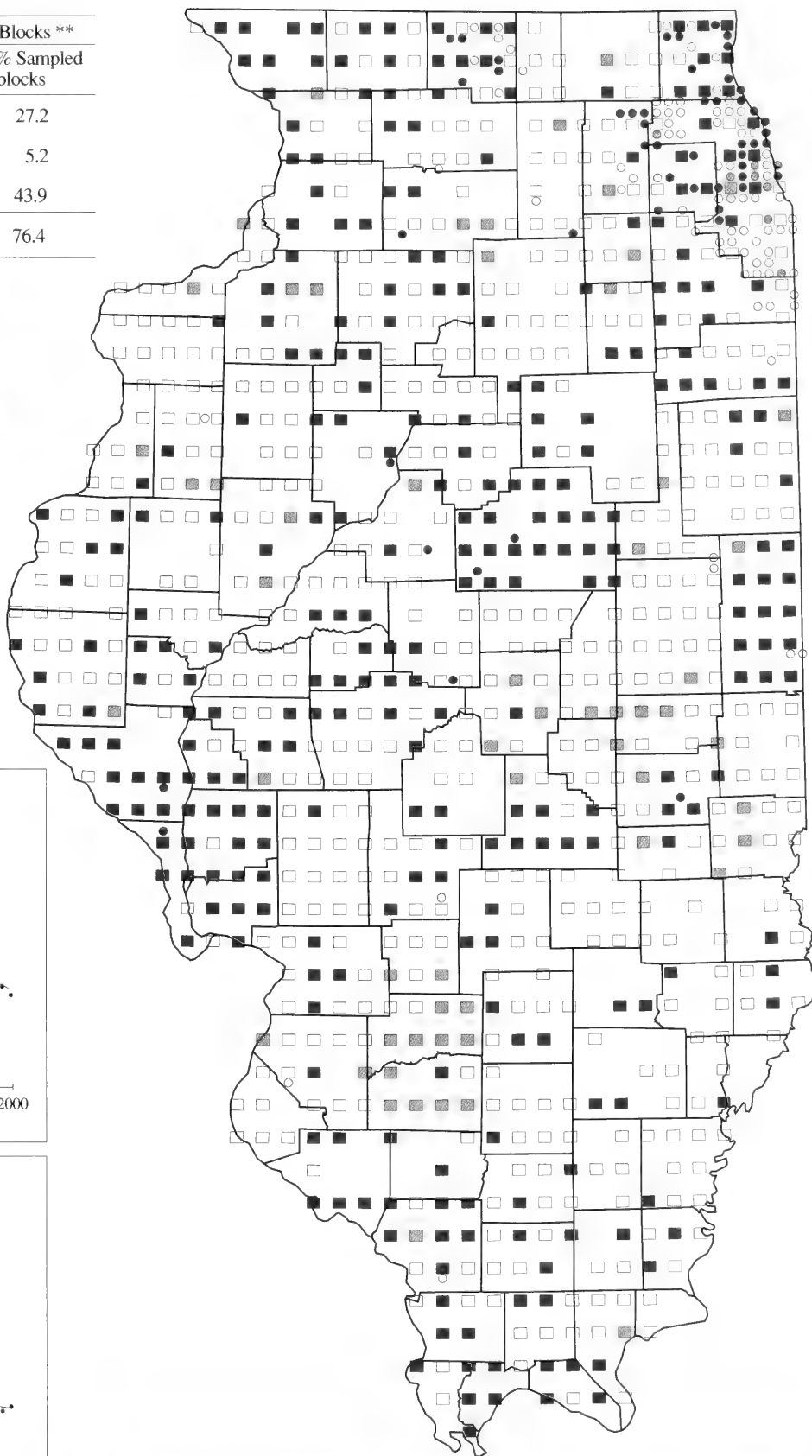
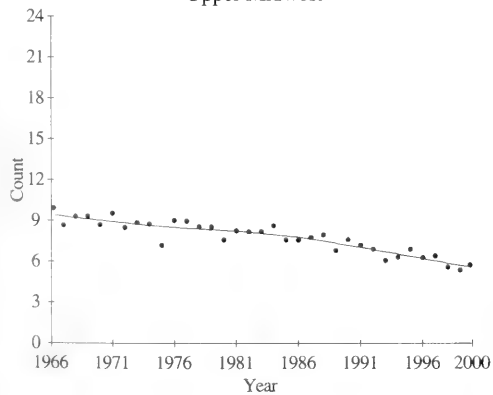


## Breeding Bird Survey Trends

Illinois



Upper Midwest



**Chimney Swift**



Richard Day / Daybreak Imagery

**Code: RTHU**

**Rangewide Distribution:** southeastern and south-central Canada and eastern U.S. south to Panama.

**ILLINOIS**

**Abundance:** fairly common migrant and summer resident, decreasing northward.

**Endangered/Threatened Status:** none

**Breeding Habitat:** deciduous or mixed deciduous-coniferous woodland, open areas with scattered trees, flower gardens, and parks.

**Nest:** small cup of bud scales and lichens lined with plant down and bound with spider silk, placed on a tree branch in dense vegetation, usually beneath the tree canopy.

**Eggs:** 2, white, unmarked.

**Incubation:** 11–14 days.

**Fledging:** from 14 to 28 days.

deciduous forests and mixed deciduous-coniferous woodlands but also utilizes woodland edges and openings. In addition to feeding on floral nectar and small insects, the Ruby-throated is readily attracted to hummingbird feeders. These hummingbirds are aggressive, often chasing other birds away from food sources.

**Illinois History**

The Ruby-throated Hummingbird has always been a fairly common breeding species throughout Illinois (Ridgway 1889; Cory 1909; Bohlen 1989). It commonly occurs where there is an abundance of nectar-producing flowers or well-maintained feeders. These birds are often found at hummingbird feeders in mid-to-late summer. Feeding stations in Jackson and Union counties attract more than a hundred hummingbirds on a daily basis in July and August.

**Breeding Bird Survey Trends**

From 1966 to 2000 the trend estimate is 4.7% per year (nonsignificant,  $P = 0.11$ ) for the Illinois hummingbird population. The trend estimate indicates that the population in the upper Midwest increased at an annual rate of 3.9% (significant,  $P < 0.01$ ) for the same period.

*Credibility Index:* IL = 2 and UM = 2.

**Distribution**

Atlas data indicate that hummingbirds occurred throughout the state. They were found in priority blocks in 93 counties and Confirmed as breeding in 40 of them. They were found more often in priority blocks in the southern half of the state.

**Frequency**

The Ruby-throated Hummingbird was reported from 420 (42.1%) priority blocks and another 37 nonpriority blocks. Breeding was Confirmed in 73 (7.3%) of the priority blocks; three-fourths of these records were reports of occupied nests (30 ON records), nest with eggs (13 NE records), or fledged young (12 FL records). Atlasers often relied on homeowners with hummingbird feeders to provide evidence of occurrence for the atlas project. Because hummingbirds are small, quick, and vocally weak, and their nests are extremely difficult to locate, confirmation of breeding was not easy. They were Confirmed in 17% of the 420 priority blocks in which they were reported, which is a relatively low rate of confirmation considering the total number of breeding records. It is possible that the Ruby-throated bred in the majority of blocks in which it was reported.

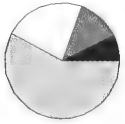
The Ruby-throated Hummingbird has a breeding range that includes much of eastern North America from southern Canada to the Gulf coast. It is the smallest bird in eastern North America and the only hummingbird that regularly breeds in the eastern half of the continent. The name is derived from the humming of its wings as it moves from place to place or hovers while feeding. The male has an elaborate courtship flight that loops back and forth, pendulum-fashion, above the female. The Ruby-throated prefers

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	73	7.3	17.4	87	6.8
Probable	122	12.2	29.0	131	10.2
Possible	225	22.5	53.6	239	18.6
Totals	420	42.1	100.0	457	35.5

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



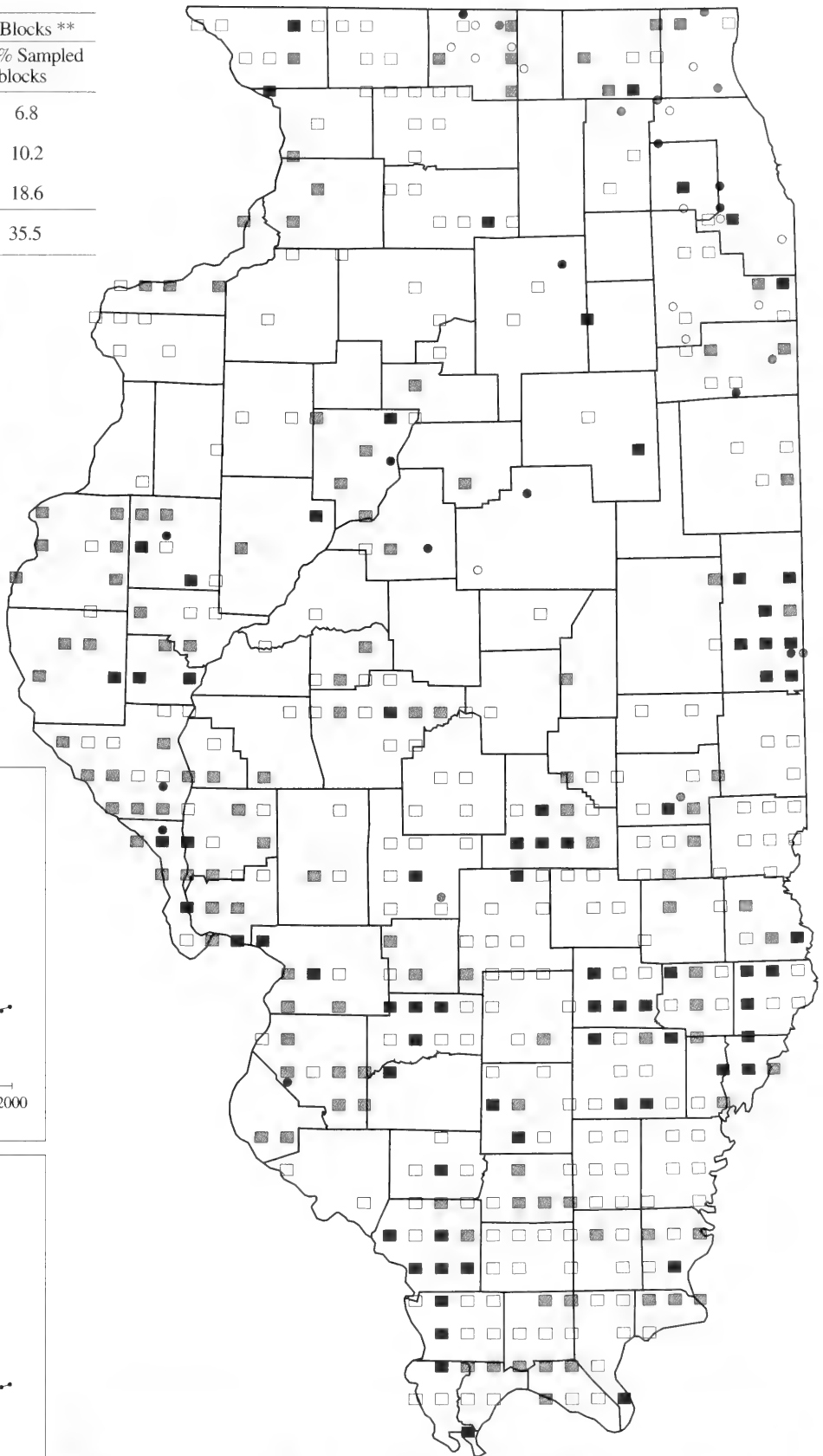
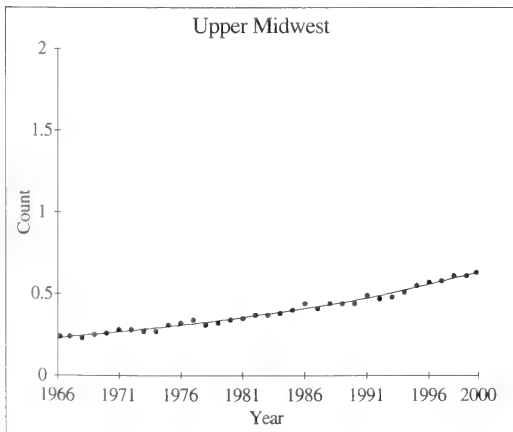
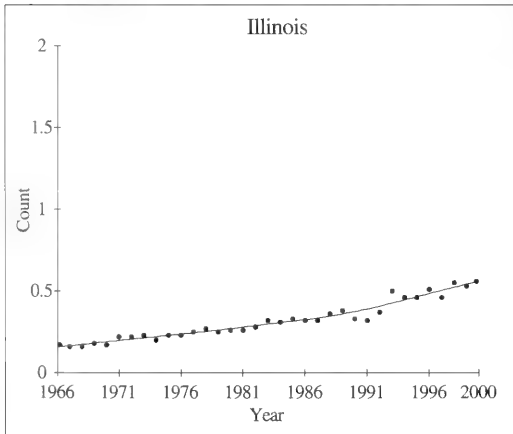
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

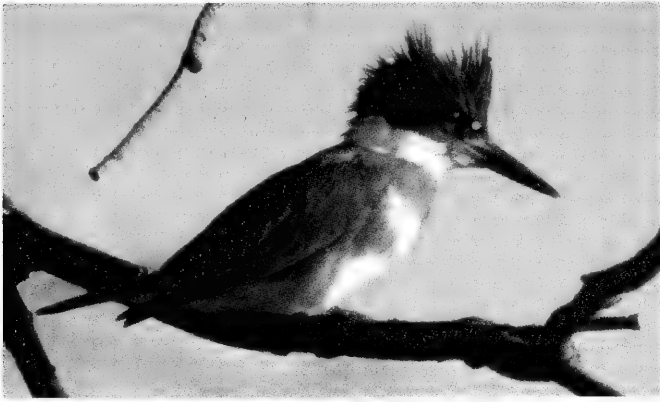
	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○

## Breeding Bird Survey Trends



**Ruby-throated Hummingbird**





*Annalee Fjellberg*

**Code: BEKI**

**Rangewide Distribution:** throughout most of North America from Alaska and northern Canada, south through Central America.

**ILLINOIS**

**Abundance:** fairly common migrant and summer resident, uncommon winter resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** along rivers, streams, and other watercourses.

**Nest:** a saucer lined with grass and leaves at the end of a burrow or cavity in a vertical bank, near water.

**Eggs:** 6–7, white, unmarked.

**Incubation:** 23–24 days.

**Fledging:** 23 or more days.

In North America the Belted Kingfisher breeds in suitable habitat from northern Canada and Alaska through the southern states, except for the southwestern U.S. It is the only species in this generally tropical family to occur in its range. This species is one of only a few species of North American birds in which the female is more brightly colored than the male. Belted Kingfishers, which are easily identified by their rattling call, are found around clear open water and during the breeding season, where there is a vertical earthen bank for nesting. They capture fish and occasionally amphibians and crayfish in shallow water or near the surface by plunging beak-first into the water from an overhanging perch or from a hovering position. For nesting they prefer stream or river banks, but may use any vertical bank of suitable

height and texture (e.g., sand and gravel pits, landfills, and sawdust piles) in which to dig their nesting burrows. At one time kingfishers were persecuted by fishermen and at fish hatcheries because of their diet.

**Illinois History**

The status and distribution of Belted Kingfishers in Illinois is virtually unchanged since the late 1800s. The account by Cory (1909) characterizes the Belted Kingfisher as a common summer resident in Illinois and considered it a familiar bird wherever there was water. The Belted Kingfisher is one of only three species that occur in Illinois that builds its nest in a burrow (the other two are the Bank and Rough-winged swallows).

**Breeding Bird Survey Trends**

In Illinois, the Belted Kingfisher population has increased at an annual rate of 5.9% (significantly,  $P < 0.01$ ) between 1966 and 2000. The trend estimate for the upper Midwest population for the same period is 0.1% per year (nonsignificant,  $P = 0.92$ ).

*Credibility Index: IL = 2 and UM = 2.*

**Distribution**

Belted Kingfishers occurred throughout Illinois but were found more frequently in priority blocks in the northern three-quarters of the state during the atlas project. Their occurrence as a breeding species is highly dependent on the availability of suitable nesting sites. The gaps in occurrence records for the central and south-central portions of the state include many blocks that were not adequately surveyed. Kingfishers were reported in priority blocks in 98 counties and probably occurred in every county.

**Frequency**

The Belted Kingfisher was reported from 538 (53.9%) priority blocks and 110 nonpriority blocks. It was Confirmed as breeding in 144 (14.4%) of the priority blocks. Most of the evidence for Confirmed records in priority blocks was observations of adults feeding young (62 FY records), occupied nests (42 ON records), and fledged young (28 FL records). Since Belted Kingfishers can be identified readily by sight and sound, they were usually found where present in blocks that were adequately searched. Although nesting burrows are easily recognized when seen, they are not easy to find and in most instances require searches by boat to find them. Therefore, most blocks where kingfishers were recorded but not Confirmed were probably breeding sites.

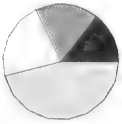


## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	144	14.4	26.8	169	13.1
Probable	176	17.6	32.7	228	17.7
Possible	218	21.8	40.5	251	19.5
Totals	538	53.9	100.0	648	50.4

\* 998 priority blocks

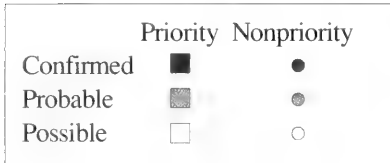
\*\* 1,286 total blocks (priority and nonpriority)



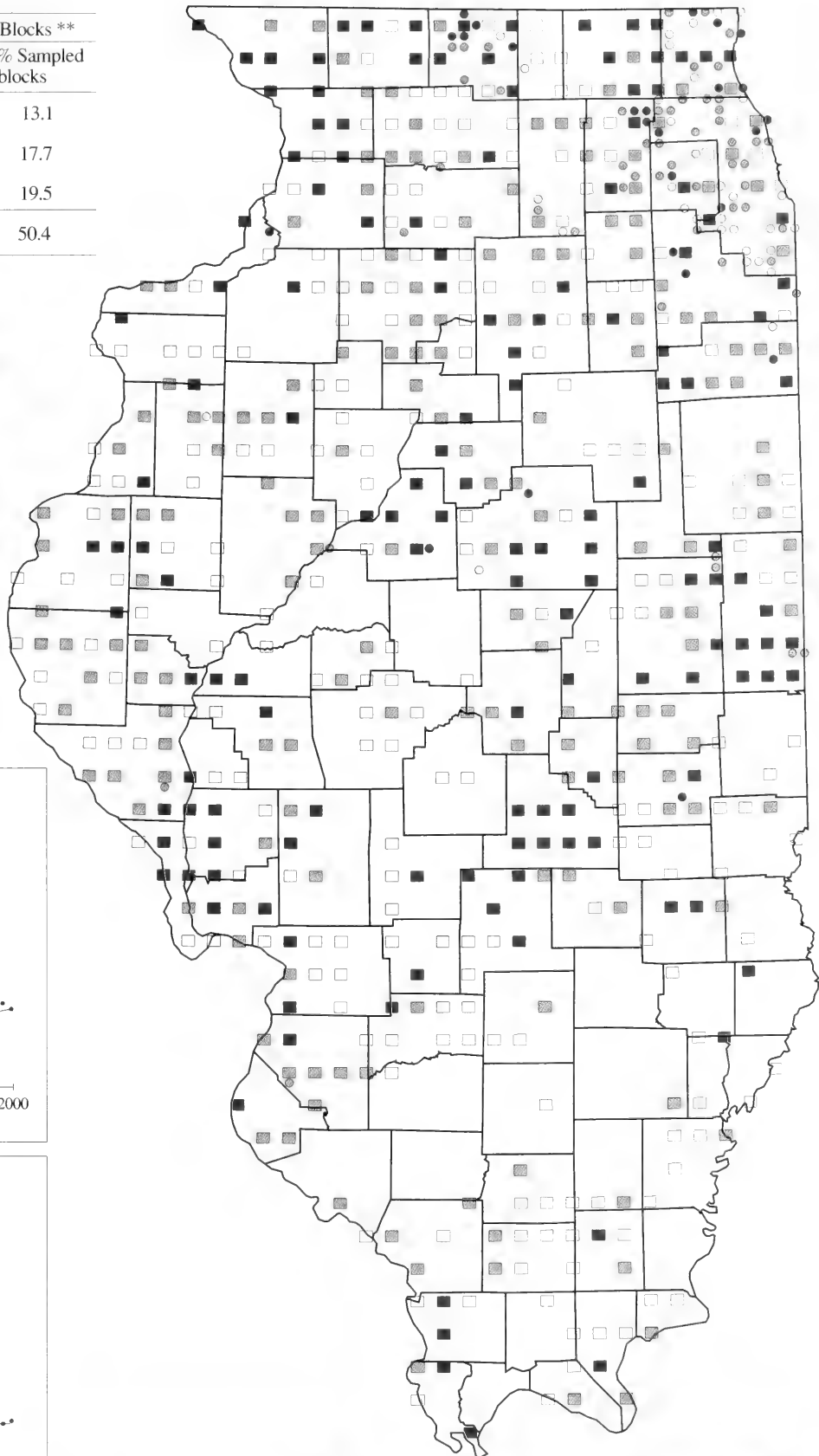
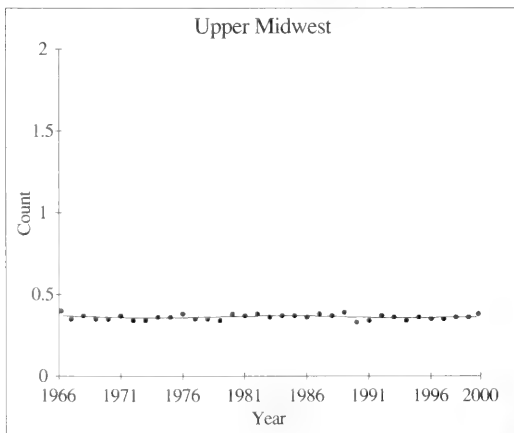
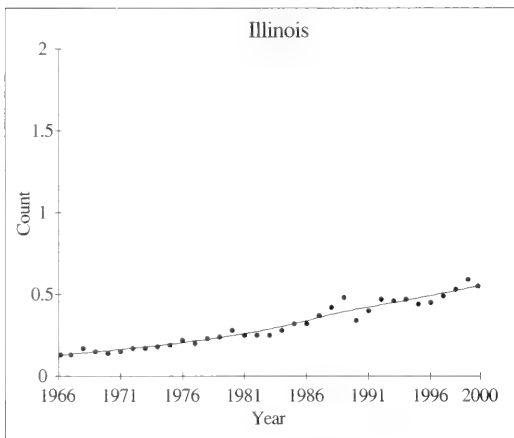
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



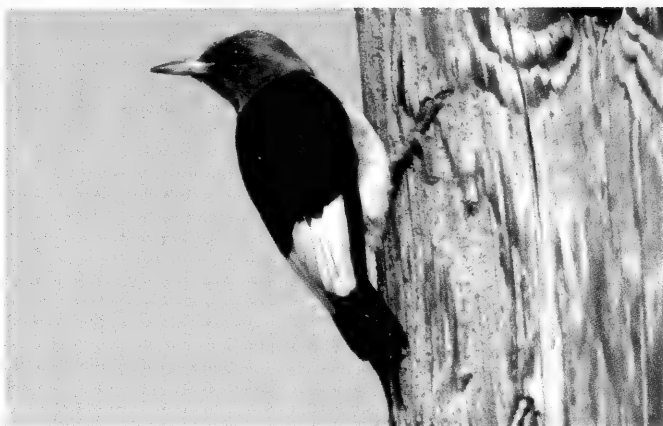
## Breeding Bird Survey Trends



**Belted Kingfisher**

## Red-headed Woodpecker

## *Melanerpes erythrocephalus*



Robert Randall

**Code: RHWO**

**Rangewide Distribution:** extreme south-central and southeastern Canada and eastern U.S.

**ILLINOIS**

**Abundance:** common migrant and summer resident, fairly common to uncommon winter resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous woodlands, savannas, swamps, open areas, parks, and other areas with dead snags.

**Nest:** an excavated cavity lined with wood chips, in a tree or utility pole.

**Eggs:** 4–5, white, unmarked.

**Incubation:** 12–13 days.

**Fledging:** from 27 to 30 days.

The strikingly colored Red-headed Woodpecker, the only woodpecker in the eastern North America with an entirely red head, is a noisy and aggressive bird. During the breeding season, it prefers open woodlands, savannas, woodland edges, and parks but is also known to inhabit cleared woodlands and bottomland forests. The Red-headed Woodpecker excavates a hole in a tree trunk, utility pole, or fence post for a nest. It feeds on acorns, nuts, and corn which it frequently stores, and sometimes insects. The numbers of this species have fluctuated greatly over the past two centuries, perhaps due in part to the variation in mast (e.g., acorns) production. Red-headed Woodpeckers breed

throughout much of the eastern half of North America from southern Canada to the Gulf coast. Rangewide, the population has declined in recent decades, according to Breeding Bird Survey data. Competition with European Starlings for nesting cavities and the loss of nesting trees and oak woodlands are considered factors causing population declines in the past century.

**Illinois History**

In the 1800s the Red-headed Woodpecker was “decidedly the most numerous member of the family” in the more heavily wooded portions of Illinois (Ridgway 1889). At the turn of the century it was an abundant summer resident and a regular winter resident in southern Illinois (Cory 1909). From the early to mid-1900s the summer population significantly declined, most prominently in the southern third of the state. The decline was attributed to the competition from starlings and loss of savanna habitat (Graber and Graber 1963; Wallace et al. 1961). Populations increased with massive tree die-offs caused by the spread of Dutch elm disease and major flooding. In recent years, the Red-headed Woodpecker population has experienced another major decline.

**Breeding Bird Survey Trends**

BBS data indicate that the Illinois and upper Midwest populations of this woodpecker have been declining over the past 35 years. The trend for 1966–2000 for Illinois is estimated at  $-2.8\%$  per year (significant,  $P < 0.01$ ). The trend estimate for the upper Midwest is also negative at  $-3.8\%$  per year (significant,  $P < 0.01$ ).

*Credibility Index:* IL = 2 and UM = 2.

**Distribution**

During the atlas project, the Red-headed Woodpecker was a widespread breeding species throughout the state despite its declining population. This species was found in priority blocks in every county and was among the most frequently reported and widely distributed species in priority blocks.

**Frequency**

The Red-headed Woodpecker was reported from 861 (86.3%) priority blocks and 105 nonpriority blocks. Breeding was Confirmed in 558 (55.9%) of the priority blocks. The presence of this woodpecker was easy to detect. Ninety percent of the Confirmed records in priority blocks were confirmed by observation of adults feeding young (203 FY records), occupied nests (170 ON records), and fledged young (131 FL records).

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	558	55.9	64.8	613	47.7
Probable	174	17.4	20.2	202	15.7
Possible	129	12.9	15.0	151	11.7
Totals	861	86.3	100.0	966	75.1

\* 998 priority blocks

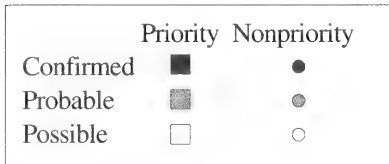
\*\* 1,286 total blocks (priority and nonpriority)



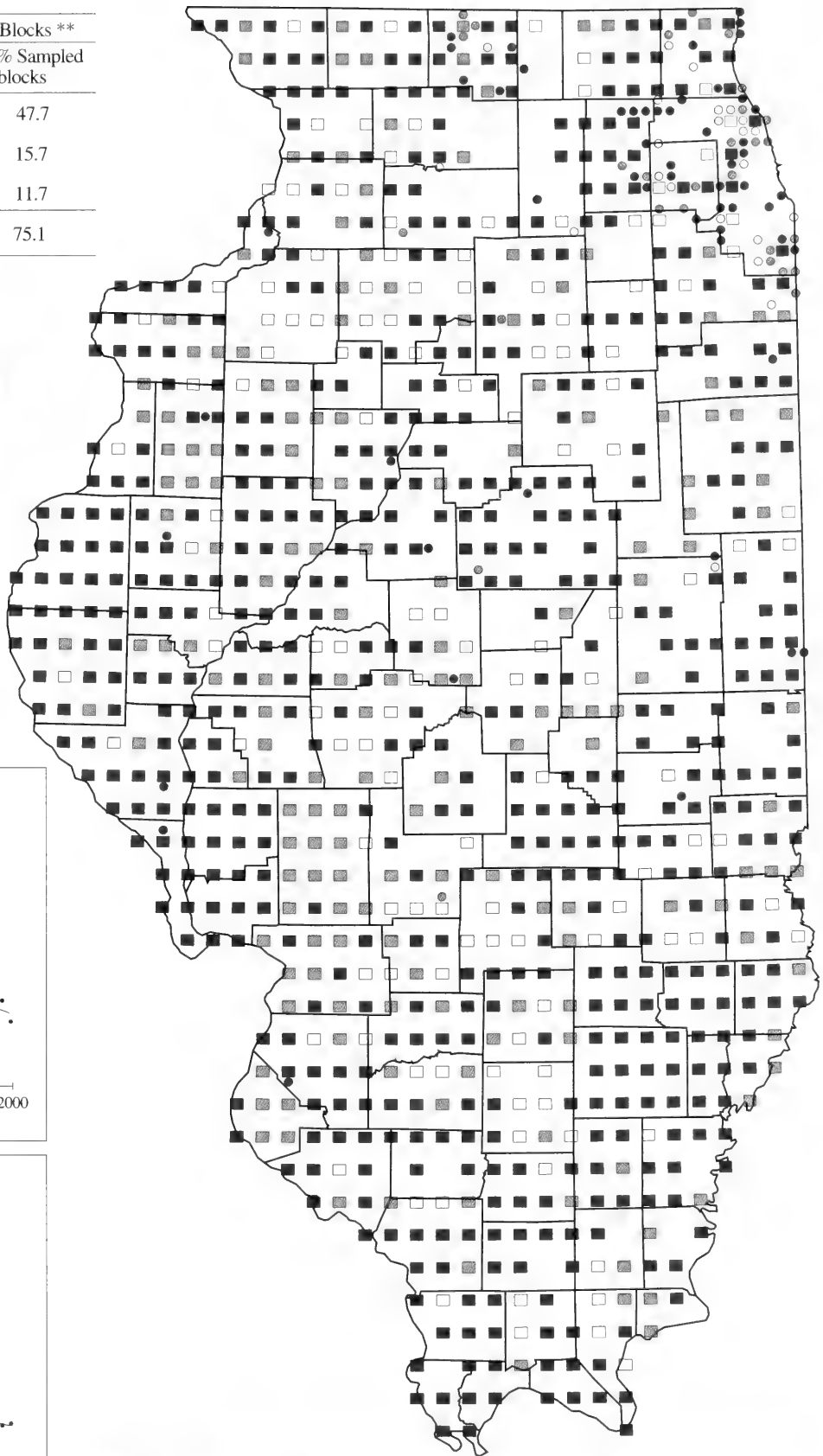
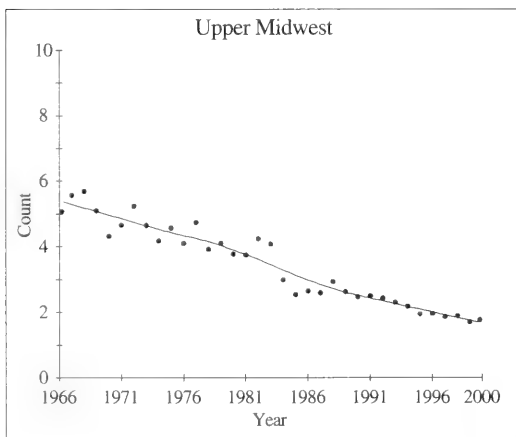
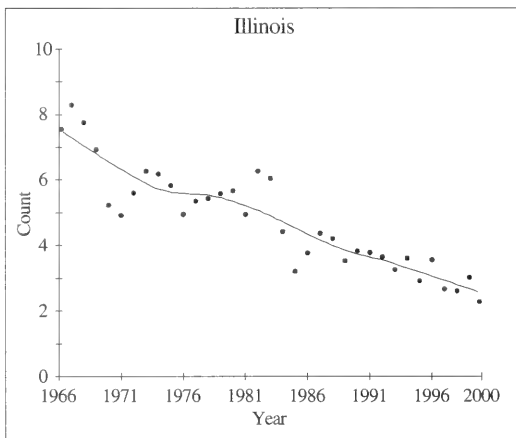
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Red-headed Woodpecker**

## Red-bellied Woodpecker

## *Melanerpes carolinus*



Dennis Oehmke

**Code:** RBWO

**Rangewide Distribution:** eastern half of the U.S.

### ILLINOIS

**Abundance:** common permanent resident, decreasing northward

**Endangered/Threatened Status:** none

**Breeding Habitat:** upland and bottomland deciduous forests and woodlands, swamps, parks, and towns.

**Nest:** an excavated cavity in a deciduous tree, occasionally a utility pole.

**Eggs:** 4–5, white, unmarked.

**Incubation:** 12–14 days

**Fledging:** from 24 to 27 days.

The Red-bellied Woodpecker is a common, conspicuous, and noisy permanent resident of upland and bottomland forests in the eastern half of the U.S. from Canada to the Gulf coast. This species inhabits a wide variety of forest types and also occurs in semi-open and open areas with a scattering of trees and around settled areas, such as parks and older residential areas. Nesting and roosting cavities are usually excavated in dead tree limbs, often on the underside of the limb. The Red-bellied feeds on a variety of food sources, such as fruits, insects, seeds, and especially acorns. This species competes

with Red-headed Woodpeckers and European Starlings for nesting sites, and is rarely found in the same tree. The Red-bellied may occur in the same area as the Red-headed Woodpecker but generally breeds in larger, denser forests (Jackson et al. 1996). The breeding range of the Red-bellied expanded north and west during the last half of the 1900s, and the species is abundant in the southeastern states (Shackelford et al. 2000).

### Illinois History

During the late 1800s and early 1900s, the Red-bellied Woodpecker was a “rather uncommon resident in northern Illinois . . . but common in southern Illinois” (Cory 1909). During surveys of 1907–1909, the breeding population was mostly limited to the southern zone. During 1956–1958 surveys this species was found throughout the state but the nesting population in the northern zone was still very sparse (Graber and Graber 1963). By 1957–1958 the number of Red-bellied Woodpeckers had greatly increased in the state (Graber and Graber 1963).

### Breeding Bird Survey Trends

During the period 1966–2000 the Red-bellied Woodpecker populations increased in Illinois and the upper Midwest at annual rates of 1.7% (significant,  $P < 0.01$ ) and 1.6% (significant,  $P < 0.01$ ), respectively.

*Credibility Index:* IL = 2 and UM = 2.

### Distribution

The Red-bellied Woodpecker was found statewide during the atlas project, with priority block records in all but one county. It was more frequently reported in priority blocks in the central and southern portions of the state, which is the distribution pattern reported in the 1950s (Graber and Graber 1963).

### Frequency

The Red-bellied Woodpecker was reported from 762 (76.4%) priority blocks and another 97 nonpriority blocks. Breeding was Confirmed in 388 (38.9%) of the priority blocks. The breeding evidence for 93% of Confirmed records was adults feeding young (175 FY records), fledged young (114 FL records), and occupied nests (70 ON records). Since Red-bellied Woodpeckers are permanent residents and their presence was easy to detect, it is likely that nesting occurred in the majority of blocks in which the species was recorded.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	388	38.9	50.9	432	33.6
Probable	172	17.2	22.6	202	15.7
Possible	202	20.2	26.5	225	17.5
Totals	762	76.4	100.0	859	66.8

\* 998 priority blocks

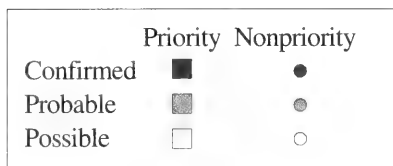
\*\* 1,286 total blocks (priority and nonpriority)



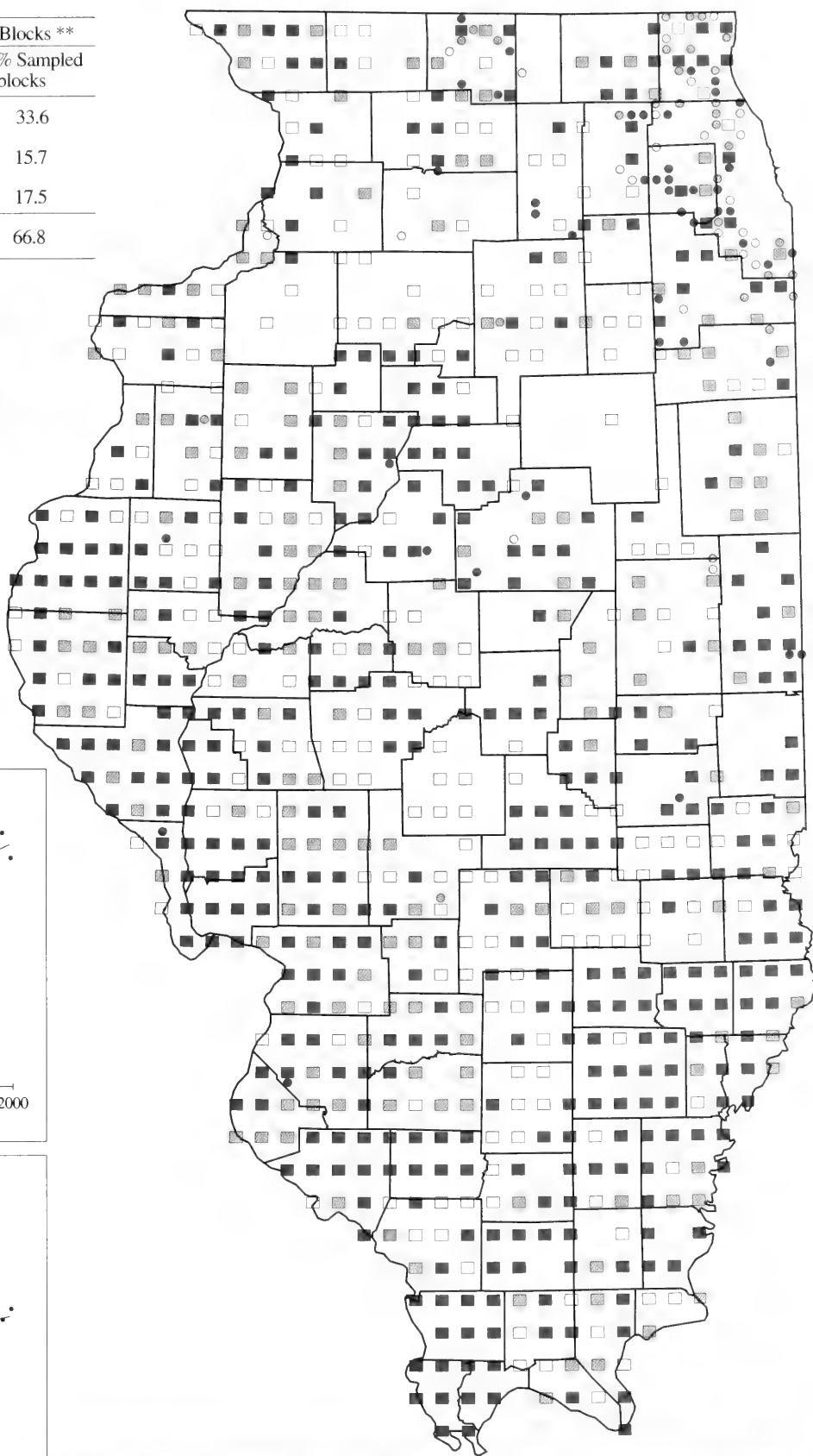
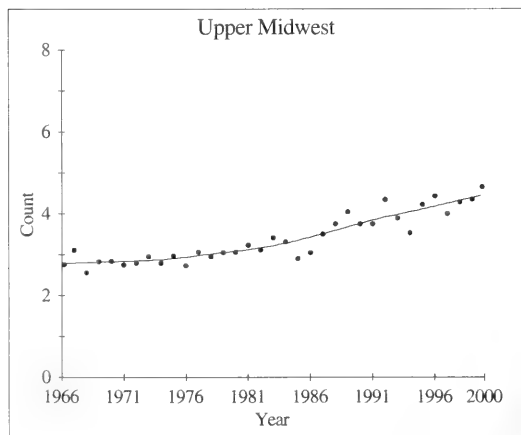
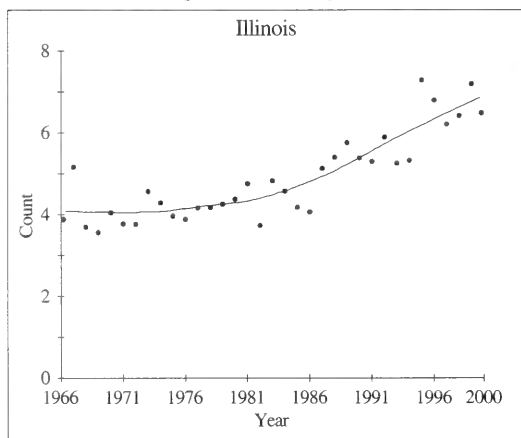
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Red-bellied Woodpecker**

## Yellow-bellied Sapsucker

## *Sphyrapicus varius*



Peter Dring

### Code: YBSA

**Rangewide Distribution:** southern Canada, the eastern half of the U.S. to western Panama.

### ILLINOIS

**Abundance:** fairly common migrant, rare summer resident, uncommon winter resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous or coniferous forests.

**Nest:** a tree cavity lined with chips.

**Eggs:** 5–6, white, unmarked.

**Incubation:** 12–13 days.

**Fledging:** from 25 to 29 days.

The Yellow-bellied Sapsucker, named for its yellow belly and sap-feeding habits, is common to fairly common in deciduous and coniferous forests, and prefers large tracts of habitat (Jackson et al. 1996). Its breeding range includes the northern states from the Atlantic coast to North Dakota and much of southern and western Canada. The sapsucker drills neat rows of small holes in circles on live trees and feeds on the sap that wells up in the holes and the insects that are attracted to the sap. Drilling in the late winter and early spring is timed to occur when the sugar content in the running sap is at its highest and other sources of food are scarce. Sapsuckers also eat fruit. The male excavates cavities for nesting and roosting. Unlike most woodpeckers that

require older, mature trees and dead snags, the Yellow-bellied Sapsucker makes extensive use of early successional forests (Walters et. al. 2002).

### Illinois History

The Yellow-bellied Sapsucker, whose breeding range is primarily north of Illinois, has never been an easy species to find nesting in the state. Although Kennicott (1855) noted that nesting was known to occur in Cook County and Cooke (1888) referenced the presence of two nests in Vermilion County in 1884, Ridgway (1889) wrote that “though it may perhaps breed sparingly in the extreme northern portion, I can find no record of its doing so.” Cory (1909), likewise, indicated that it was an occasional summer resident in northern Illinois without citing specific records. Between 1888 and 1955, nesting was recorded in Marshall, Tazewell, Putnam, Cook, and Henderson counties (Bohlen 1989). More recently, nesting has been reported from Carroll and Vermilion counties (Guth 1986; Kleen 1987).

### Breeding Bird Survey Trends

The Yellow-bellied Sapsucker is a rare breeding species in Illinois and BBS data are insufficient for estimating population trends for the state. The upper Midwest population trend estimate is 1.5% (nonsignificant,  $P = 0.21$ ) for 1966–2000. From 1980 to 2000 the data indicate that the Midwest population increased (significant,  $P < 0.01$ ) at an annual rate of 3.8%.

*Credibility Index: IL = none and UM = 2.*

### Distribution

Three breeding or potential breeding locations for Yellow-bellied Sapsuckers were reported during the atlas project, all south of the expected range. Although breeding sapsuckers are rare in the state, they are more commonly expected in the bottomlands of the Mississippi River from Henderson County northward and perhaps the bottomlands of the Illinois River from Peoria County northward. Yellow-bellied Sapsuckers continued to maintain a small and spotty breeding population in northern Illinois. This species regularly nests at Lost Mound National Wildlife Refuge in Jo Daviess and Carroll counties (D. Wenny, pers. comm.).

### Frequency

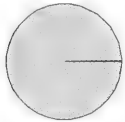
The Yellow-bellied Sapsucker was reported from three (0.3%) priority blocks and no nonpriority blocks. Breeding was Confirmed in a single priority block located in Vermilion County, where recently fledged young were found.

## Breeding Evidence

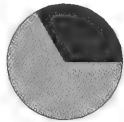
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	33.3	1	0.1
Probable	2	0.2	66.7	2	0.2
Possible	0	0.0	0.0	0	0.0
Totals	3	0.3	100.0	3	0.2

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

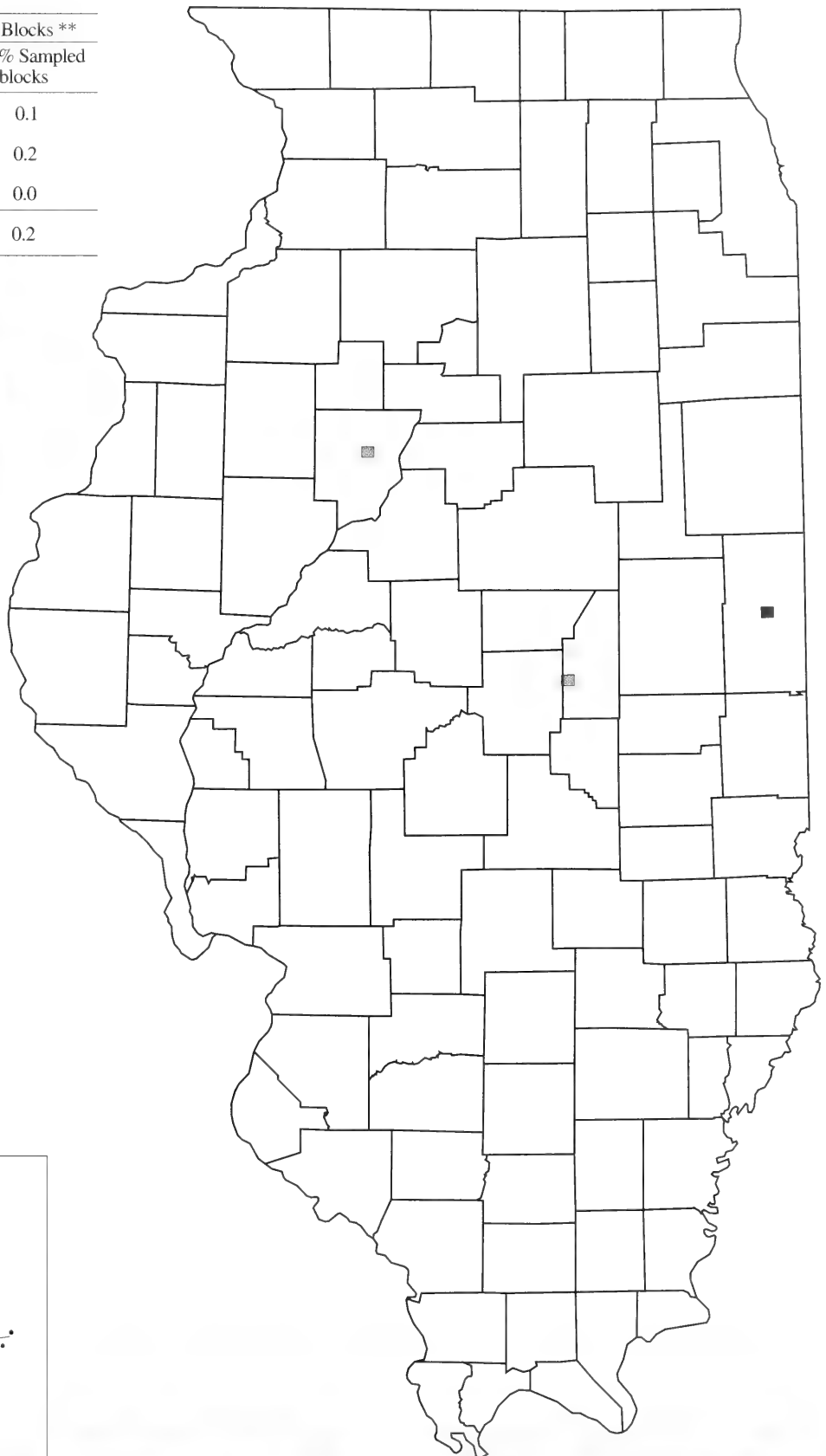


% of 998 sampled priority blocks (gray = no records for this species)

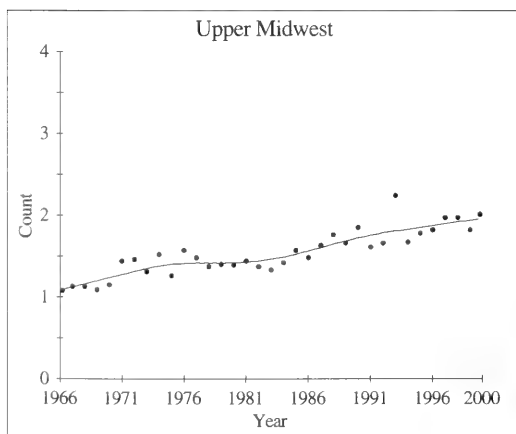


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Yellow-bellied Sapsucker**





Richard Day / Daybreak Imagery

## Code: DOWO

**Rangewide Distribution:** southeastern Alaska, southern half of Canada, and the U.S. except the southwest.

## ILLINOIS

**Abundance:** common permanent resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous and coniferous forests and woodlands, parks, orchards, and residential areas.

**Nest:** an excavated tree cavity lined with chips.

**Eggs:** 4–5, white, unmarked.

**Incubation:** 12 days.

**Fledging:** from 20 to 25 days.

The Downy Woodpecker is the smallest woodpecker in North America. Its breeding range includes southern and western Canada and all of the U.S. except for the Southwest. The Downy looks like a smaller version of its congener, the Hairy Woodpecker. During the breeding season, the Downy Woodpecker is primarily a forest dweller that utilizes a variety of wooded habitats, including riparian corridors, forest edge, small isolated woodlots, and residential areas. Downy Woodpeckers nest and roost in cavities in dead branches of trees, usually in the forest interior. Since the

Downy is a permanent resident, its diet changes throughout the year in response to the availability of food. The breeding season diet consists primarily of insects, especially wood-boring insects; it also eats fruit, nuts, and corn.

## Illinois History

The Downy Woodpecker has always been described as a common permanent resident throughout the state (Cory 1909; Smith and Parmalee 1955; Bohlen 1989; Graber and Graber 1963). In the mid-1900s most of the population was found in the central and southern parts of the state and the Downy was about four times as common as the Hairy Woodpecker (Graber and Graber 1963). On the 2000 Spring Bird Count the ratio was about five to one (Kleen 2000b).

## Breeding Bird Survey Trends

The Downy Woodpecker is a common species that varies in abundance from year to year, the causes of which are not well understood. The trend estimate for Illinois for 1966–2000 is 0.0% per year (nonsignificant,  $P = 0.99$ ). For the upper Midwest the data indicate an increase in population of 0.8% per year for the same period (significant,  $P = 0.01$ ). *Credibility Index: IL = 1 and UM = 2.*

## Distribution

The Downy Woodpecker was widely distributed throughout the state. It was found in priority blocks in every county during the atlas project and was among the most frequently reported and widely distributed species in priority blocks.

## Frequency

The Downy Woodpecker was reported from 862 (86.4%) priority blocks and 163 nonpriority blocks. Breeding was Confirmed in 411 (41.2%) of the priority blocks. As with other woodpeckers, the most frequently used breeding evidence criteria for Confirmed records in priority blocks were fledged young (188 FL records), adults feeding young (123 FY records), and occupied nest (53 ON records). Because their nests are difficult to locate, the level of breeding confirmation for this species may be correlated with the amount of sample time spent in the blocks. Since Downy Woodpeckers are permanent residents, it is likely that nesting occurred in the majority of blocks in which they were recorded.



## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	411	41.2	47.7	493	38.3
Probable	218	21.8	25.3	271	21.1
Possible	233	23.3	27.0	261	20.3
Totals	862	86.4	100.0	1,025	79.7

\* 998 priority blocks

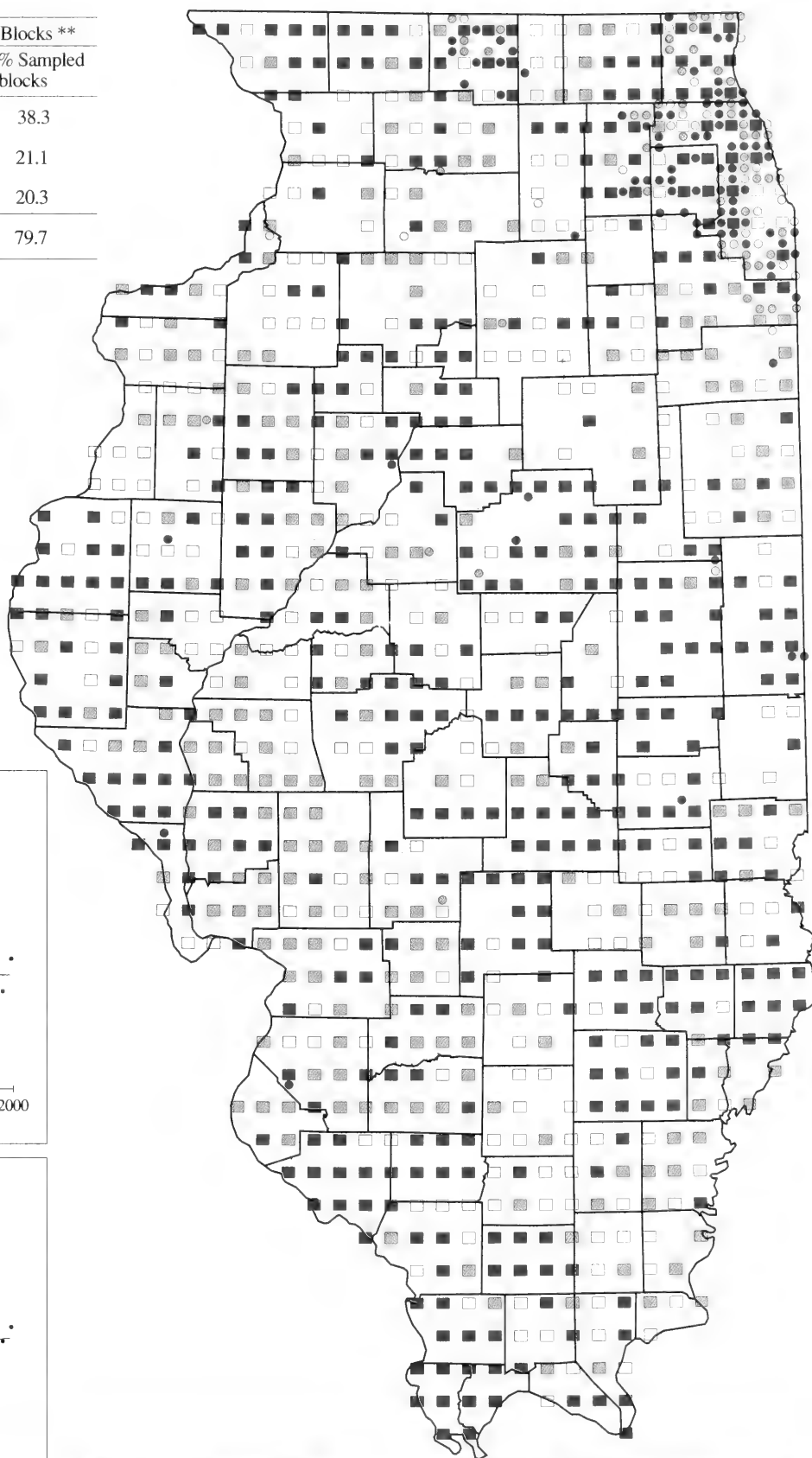
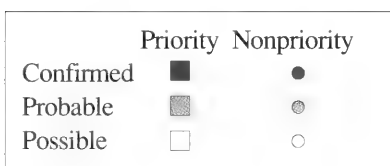
\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

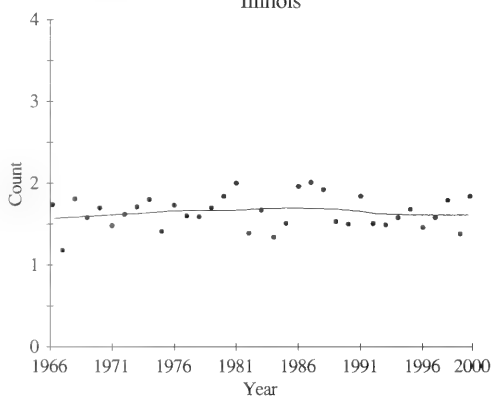


% of priority blocks with records for this species

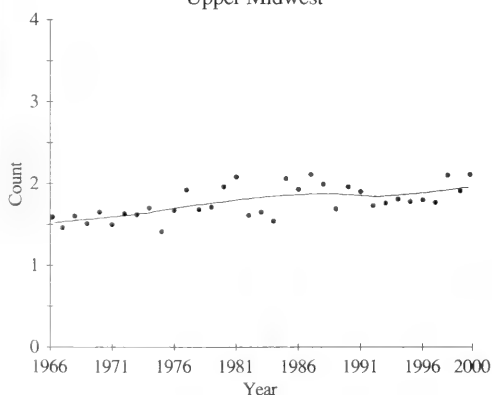


## Breeding Bird Survey Trends

Illinois



Upper Midwest



**Downy Woodpecker**



Eric Walters

**Code: HAWO**

**Range-wide Distribution:** southeastern Alaska and most of Canada, south throughout most of the U.S. to Panama.

**ILLINOIS**

**Abundance:** fairly common permanent resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous forests and woodlands with dead limbs and snags.

**Nest:** an excavated tree cavity lined with chips.

**Eggs:** 4, white, unmarked.

**Incubation:** 11–15 days.

**Fledging:** from 24 to 30 days.

This species is a nonmigratory resident throughout most of the U.S. and Canada and the highlands of Mexico and Central America; it is one of the most widely distributed woodpeckers in North America. The Hairy Woodpecker looks and sounds like the smaller Downy Woodpecker but is more likely to be found in larger, mature forests and woodlands. The presence of dead trees and dead branches on live trees is essential for nesting and feeding. The Hairy Woodpecker usually nests in the interior of forests using cavities excavated on the underside of a limb. Like the Downy, the Hairy feeds primarily on wood-boring insects but also eats nuts, fruits, seeds, and tree sap from wells made by sapsuckers. Since it is shy and flies off when approached, the best

way to detect the presence of a Hairy Woodpecker is its sharp, high-pitched, piercing call or rattle. Although fairly common throughout its range, steady declines in the Hairy Woodpecker population have occurred in eastern North America, likely due to forest fragmentation, loss of old growth, and competition for nest sites from European Starlings (Jackson et al. 2002).

**Illinois History**

Nineteenth and early twentieth century accounts of Hairy Woodpeckers in Illinois refer to them as common permanent residents (Ridgway 1889; Cory 1909). However, Barnes (1912) suggested the population was declining. Graber et al. (1977) believed that the Hairy Woodpecker population was certainly declining during the late 1950s through early 1970s. The Hairy Woodpecker population is currently estimated to be about one-fifth the size of the Downy population (Kleen 2000b).

**Breeding Bird Survey Trends**

Because of its preference for large blocks of unfragmented forest, the Hairy Woodpecker is not as well sampled by the BBS as the Downy. In Illinois the population trend for 1966–2000 is estimated at 0.6% per year (nonsignificant,  $P = 0.56$ ) and in the upper Midwest it is 1.0% per year (nonsignificant,  $P = 0.10$ ).

*Credibility Index:*  $IL = 2$  and  $UM = 2$ .

**Distribution**

Atlas data indicate that the Hairy Woodpecker was distributed throughout the state. Even though it was less common than the Downy, it was still reported in priority blocks in all but one county during the atlas project. Because it is dependent on large woodland tracts, this species is not expected to occur in heavily agricultural areas.

**Frequency**

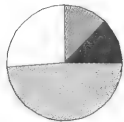
The Hairy Woodpecker was reported from 510 (51.1%) priority blocks and 96 nonpriority blocks. It was Confirmed as breeding in 127 (12.7%) of the priority blocks. The breeding evidence for most of the Confirmed records was fledged young, adults feeding young, or occupied nests (50 FL, 50 FY, and 15 ON records, respectively). Like the Downy, Hairy Woodpeckers are permanent residents and their nests are difficult to find. It is likely that nesting occurred in the majority of blocks in which they were recorded.

## Breeding Evidence

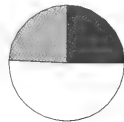
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	127	12.7	24.9	164	12.8
Probable	124	12.4	24.3	153	11.9
Possible	259	26.0	50.8	289	22.5
Totals	510	51.1	100.0	606	47.1

\* 998 priority blocks

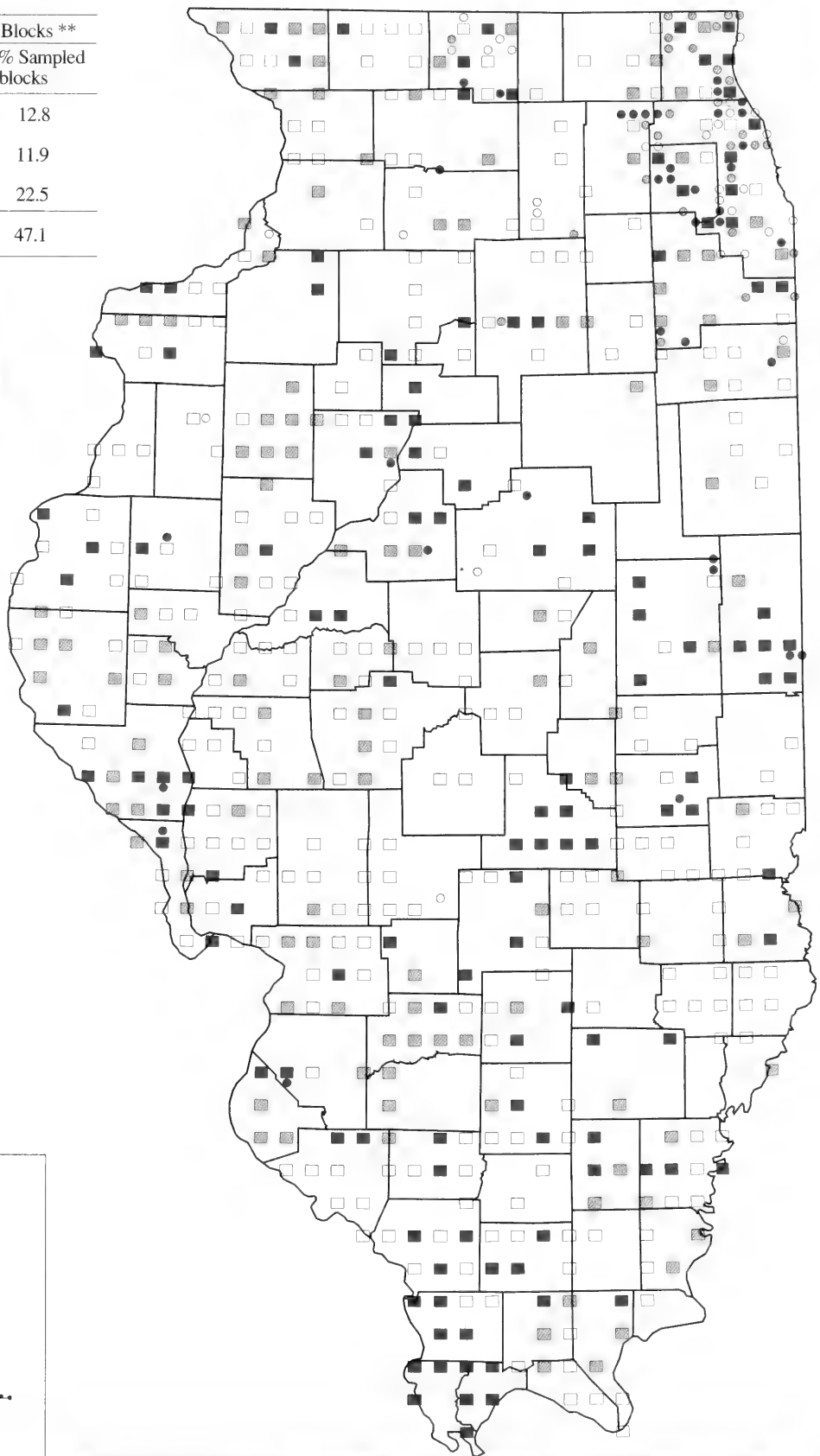
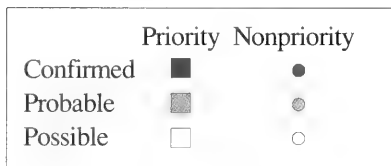
\*\* 1,286 total blocks (priority and nonpriority)



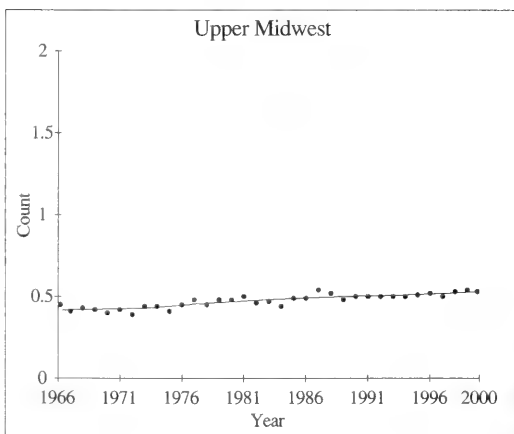
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Hairy Woodpecker**



Joe Milosevich

**Code:** YSFL

**Rangewide Distribution:** nearly all of North America; most of Alaska, Canada, south through Central America.

**ILLINOIS**

**Abundance:** common migrant and summer resident, fairly common winter resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open areas with scattered trees.

**Nest:** an excavated cavity in a tree snag or pole.

**Eggs:** 5–8, white, unmarked.

**Incubation:** 11–14 days.

**Fledging:** from 25 to 28 days.

The Northern Flicker is one of only a few bird species that nests in all 49 continental states. Its breeding range includes woodland habitat in almost all of the U.S. and Canada and the highlands of Mexico and Central America. The Northern Flicker, or yellow-hammer, is a woodpecker of open or semi-open areas with a scattering of large trees. It is much less dependent on forests than the other woodpecker species. Its habitat preferences include open woodlands, hedgerows, woody edges, savannas, and urban woodlots that are close to open, grassy foraging sites. Since ants are a favorite food, flickers spend a considerable amount of time foraging on the ground. Flickers nest in cavities in dead trees or branches, utility poles, and fence posts. Yellow-shafted Flickers (found

mostly in the East), Red-shafted Flickers (found mostly in the West), and three other closely related flicker species were combined into a single species, the Northern Flicker, in 1973 (American Ornithologists' Union 1973). Although considered common, populations are believed to be declining. Competition for nest sites with European Starlings and loss of suitable nesting trees are possible causes.

**Illinois History**

The Northern Flicker (the Yellow-shafted is the form that occurs in Illinois) was historically a common to abundant summer resident throughout Illinois (Ridgway 1889; Cory 1909). A significant decline in population occurred in the first half of the 1900s (Graber and Graber 1963). The suspected causes were conversion of savannas, open fields, and grasslands to row crops, loss of isolated nesting trees, and the invasion of the European Starling beginning in the 1930s. The breeding population was considerably higher in the north compared to the south in the early and mid-1900s (Graber and Graber 1963).

**Breeding Bird Survey Trends**

From 1966 to 2000 the Northern Flicker population declined in Illinois and the upper Midwest region at –2.6% (significant,  $P < 0.01$ ) and –3.4% (significant,  $P < 0.01$ ) per year, respectively. The trend estimates were also negative and significant for the subintervals (1966 to 1979 and 1980 to 2000) for both the state and the region.

*Credibility Index:* IL = 1 and UM = 1.

**Distribution**

The Northern Flicker was reported in priority blocks in all 102 Illinois counties during the atlas project. It was one of the most frequently reported and widely distributed species in priority blocks during the atlas project (Table 4).

**Frequency**

The Northern Flicker was reported from 920 (92.2%) priority blocks and another 173 nonpriority blocks. Breeding was Confirmed in 467 (46.8%) of the priority blocks. The breeding evidence criteria for 89% of the Confirmed records in priority blocks were fledged young (188 FL records), adults feeding young (118 FY records), and occupied nest (109 ON records).

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	467	46.8	50.8	565	43.9
Probable	206	20.6	22.4	261	20.3
Possible	247	24.7	26.8	267	20.8
Totals	920	92.2	100.0	1,093	85.0

\* 998 priority blocks

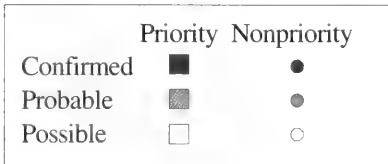
\*\* 1,286 total blocks (priority and nonpriority)



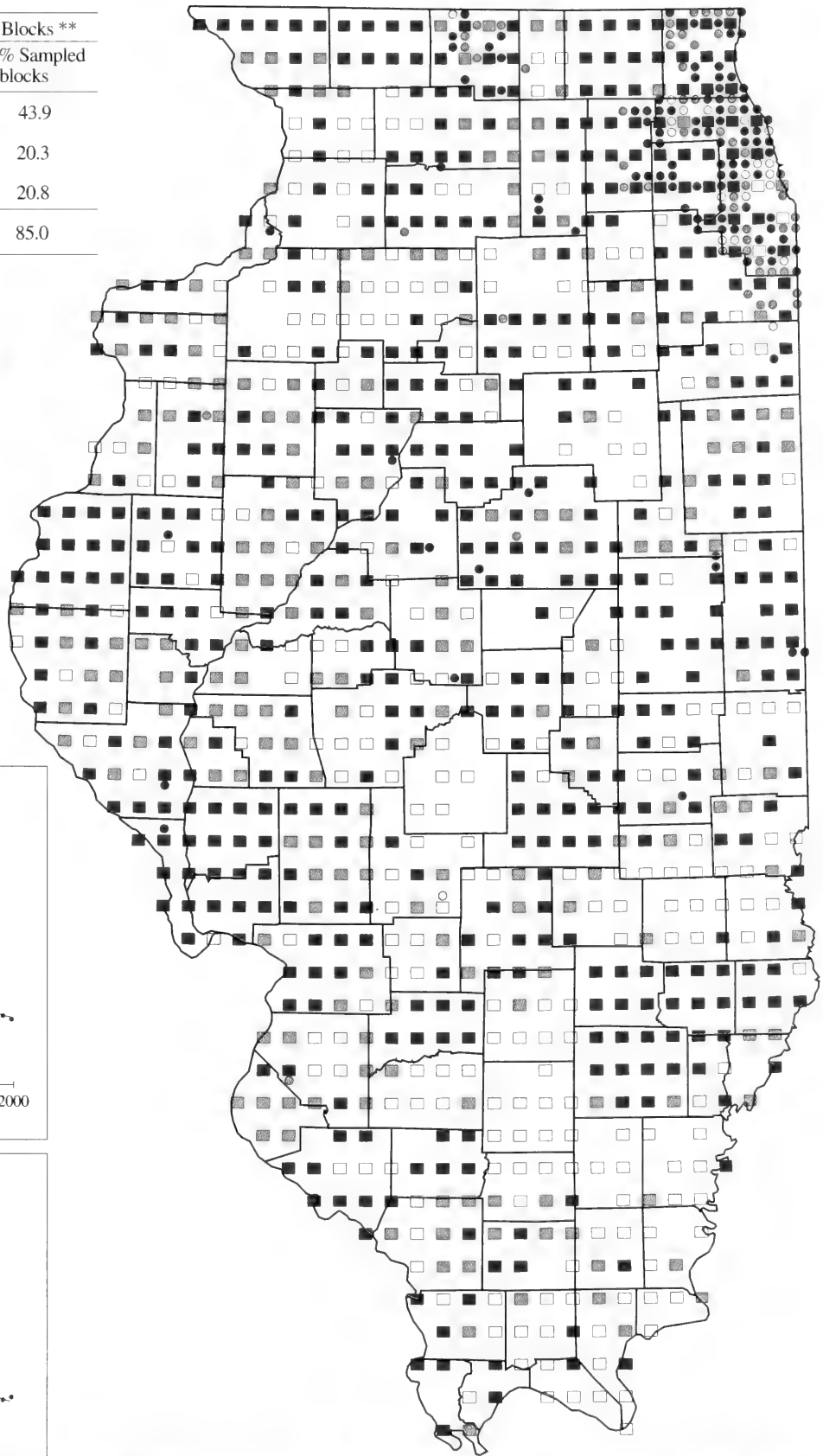
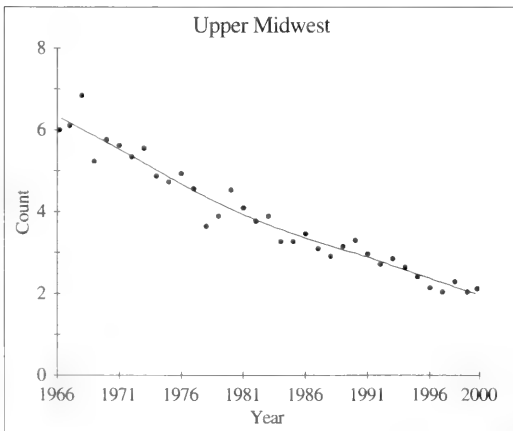
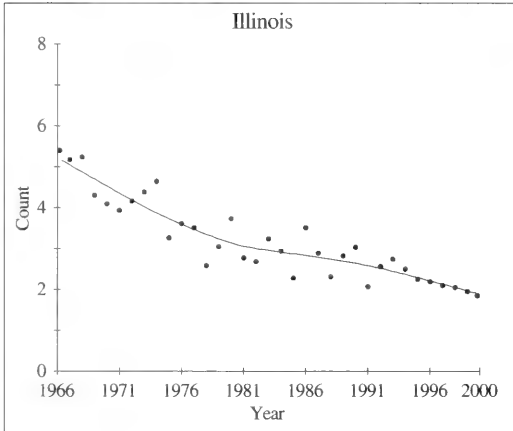
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Northern Flicker**



Michael Jeffords

**Code: PIWO**

**Range-wide Distribution:** southern half of Canada, eastern half of U.S. and the northern West Coast to central California.

**ILLINOIS**

**Abundance:** uncommon permanent resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** mature, deciduous, bottomland forests.

**Nest:** an excavated tree cavity lined with chips.

**Eggs:** 4, white, unmarked.

**Incubation:** 15–18 days.

**Fledging:** from 26 to 28 days.

The Pileated Woodpecker, colloquially known as the “cock of the woods,” is the largest woodpecker that occurs in North America. This crow-sized bird is active and noisy. Its loud flickerlike call and distinct drumming, which it uses to establish territory and attract a mate, can be recognized from a distance. The Pileated Woodpecker is an elusive permanent resident of mature forests, especially bottomland forests with dense canopy cover, and is often seen when it flies across a roadway or open area from one forest parcel to another. This species requires large blocks of forest with large trees to excavate nesting and roosting cavities. Cavities are usually large oval holes in live or standing dead trees. The Pileated’s diet consists primarily of wood-dwelling insects, including ants (especially carpenter ants), wood-boring beetles, and grubs as well as acorns, seeds, and nuts. An abundance of

downed or standing dead trees are needed for foraging (Bull and Jackson 1995). Pileated Woodpeckers are found in southern Canada from the east to west coast and in the eastern half and northwestern part of the U.S. They are common to fairly common in the southeastern states but uncommon elsewhere. The eastern U.S. population declined sharply in the early 1900s due to forest clearing but began to recover in the 1920s following the regrowth of forests; this population continues to expand (Bull and Jackson 1995).

**Illinois History**

During the late 1800s and early 1900s, the Pileated Woodpecker occurred in wooded areas throughout Illinois and was abundant in the more heavily timbered areas (Ridgway 1889). According to Cory (1909) it occurred sparingly in the wooded areas of northern Illinois. A major decline in the Pileated’s population occurred in the late 1800s and early 1900s, probably in response to widespread deforestation in the state. In the mid-1900s the population expanded up the major river valleys from the south (Graber et al. 1977). Although probably not as abundant as it once was, the Pileated Woodpecker now occupies most of its former Illinois range (Graber et al. 1977).

**Breeding Bird Survey Trends**

The Pileated Woodpecker population increased during 1966–2000 in Illinois at an estimated rate of 7.1% per year (significant,  $P < 0.01$ ) and in the upper Midwest at 3.9% per year (significant,  $P < 0.01$ ).

*Credibility Index:* IL = 2 and UM = 2.

**Distribution**

During the atlas project, the Pileated Woodpecker was found in the large, mature, floodplain forests and corridors along the Mississippi, Illinois, Kaskaskia, and Ohio rivers and their tributaries, the Wabash River drainage up to Vermilion County, and in the southern counties. It was most frequently reported from priority blocks in southern and southwestern Illinois.

**Frequency**

The Pileated Woodpecker was reported from 196 (19.6%) priority blocks and 21 nonpriority blocks. It was Confirmed as breeding in 28 (2.8%) of the priority blocks. This species was Confirmed in 14% of the 196 priority blocks in which it was recorded, which is among the lowest rates of confirmation for species reported in more than 10 priority blocks. Since the Pileated is a permanent resident, it is likely that nesting occurred in most blocks where it was recorded.

## Breeding Evidence

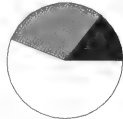
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	28	2.8	14.3	32	2.5
Probable	58	5.8	29.6	63	4.9
Possible	110	11.0	56.1	122	9.5
Totals	196	19.6	100.0	217	16.9

\* 998 priority blocks

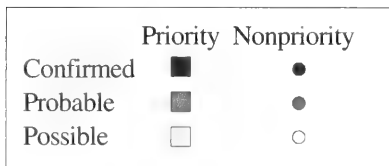
\*\* 1,286 total blocks (priority and nonpriority)



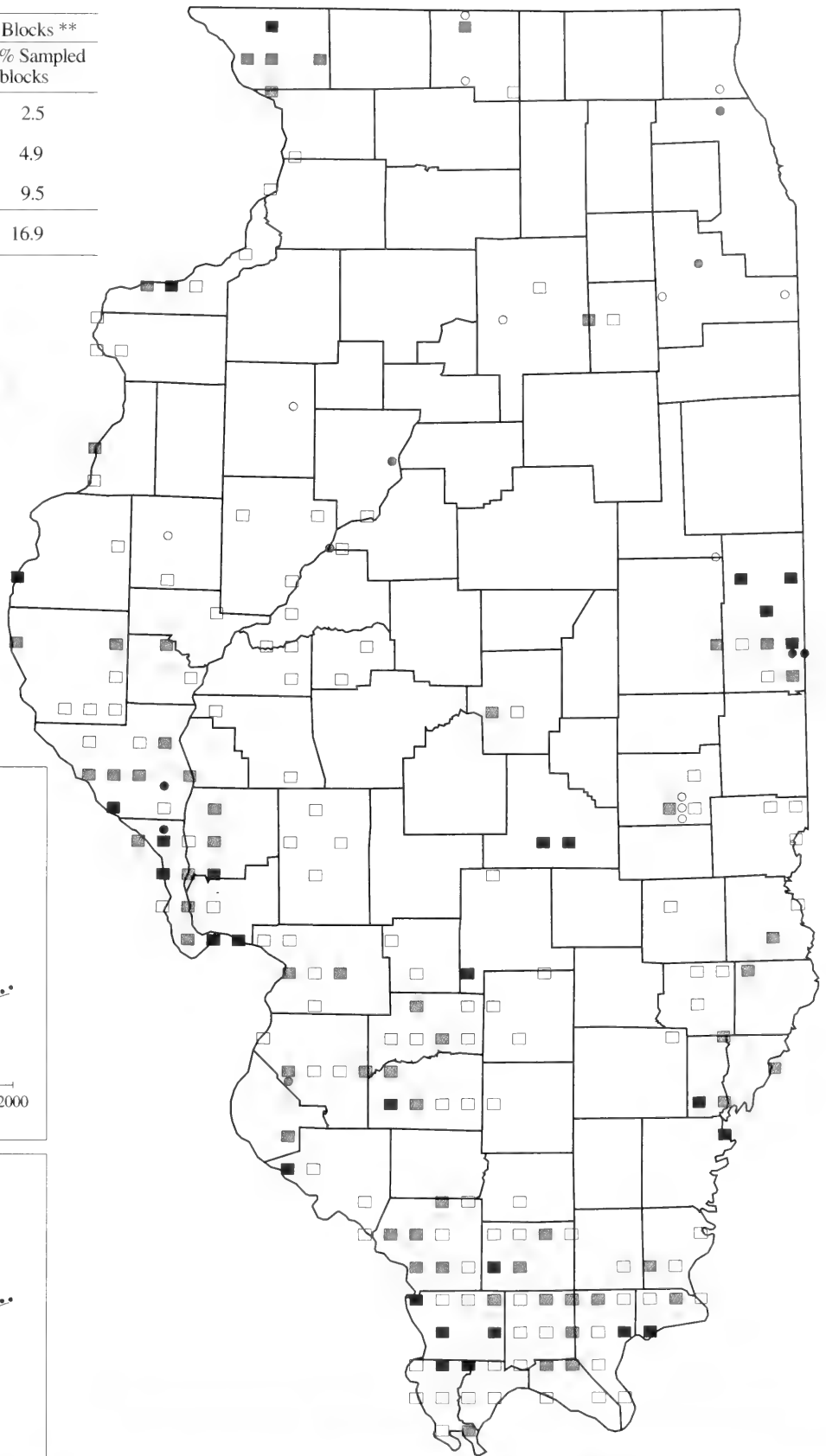
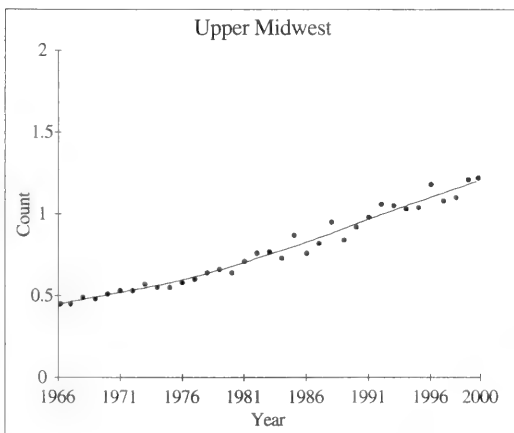
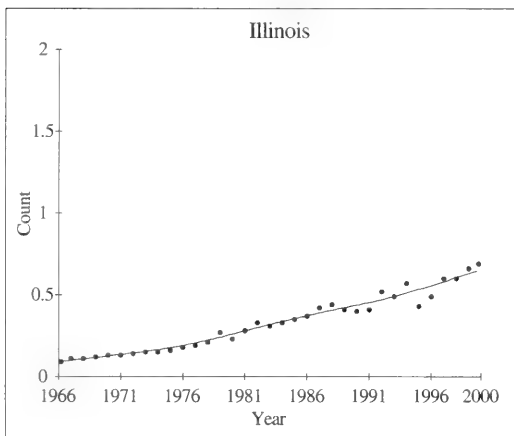
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

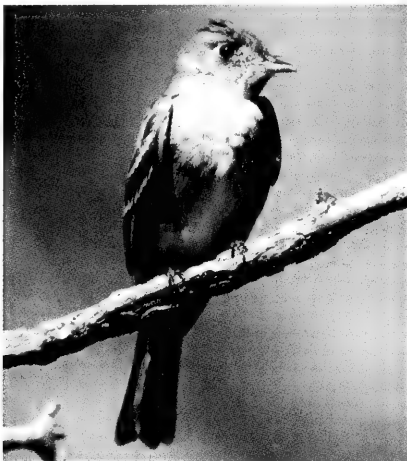


## Breeding Bird Survey Trends



**Pileated Woodpecker**





Dennis Oehmke

**Code: EAWP**

**Rangewide Distribution:** eastern half of the U.S. and adjacent southern Canada, south to northwestern South America.

**ILLINOIS**

**Abundance:** common migrant and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous and mixed forests, open woodlands, woodland edges, and parks.

**Nest:** a camouflaged cup of grass, weed stems, lichens, and cocoons lined with finer materials, well out on a horizontal tree branch.

**Eggs:** 3, white to creamy, marked (sometimes wreathed) with browns or purples.

**Incubation:** 12–13 days.

**Fledging:** from 14 to 18 days.

This woodland species is fairly common and widespread as a breeding species throughout the eastern half of the U.S. and southeastern Canada. The Eastern Wood-Pewee's plaintive song, "pee-a-wee," can be heard from dawn to dusk throughout the summer, even on the hottest days when no other birds are singing. In the East, it inhabits a variety of wooded habitats including mature upland and bottomland forests,

woodland edges, and small woodlots. Pewees spend much of their time high in the canopy. Like other flycatchers, pewees are almost exclusively insectivores. They perch motionless on the end of a branch for minutes at a time, then dart off in pursuit of insects, capturing them in flight. Their camouflaged, lichen-covered nests are placed in the fork of a high horizontal limb far out from the tree trunk. The population of this species has declined over the last 25 years but it is still considered common (McCarty 1996).

**Illinois History**

The Eastern Wood-Pewee, historically and presently, is a common summer resident (Ridgway 1889; Cory 1909; Graber et al. 1974; Bohlen 1989).

**Breeding Bird Survey Trends**

The trend estimate for 1966–2000 for the Eastern Wood-Pewee is 0.0% per year (nonsignificant,  $P = 0.97$ ) in Illinois and –0.3% per year (nonsignificant,  $P = 0.19$ ) in the upper Midwest.

*Credibility Index: IL = 1 and UM = 1.*

**Distribution**

The Eastern Wood-Pewee was found throughout the state and reported in priority blocks in all 102 counties during the atlas project. The Eastern Wood-Pewee was one of the most frequently reported and widely distributed species in priority blocks. The Eastern Kingbird was the only flycatcher found in a greater number of priority blocks. Gaps in distribution generally occurred in the highly agricultural parts of the state.

**Frequency**

The Eastern Wood-Pewee was reported from 812 (81.4%) priority blocks and 144 nonpriority blocks. Breeding was Confirmed in 212 (21.2%) of the priority blocks, mostly by observations of adults feeding young (69 FY records) and occupied nest (60 ON records). Pewees were easily detected because of their persistent daylight singing; however, nests are difficult to find. The Probable breeding category was relatively easy to establish simply by visiting the bird's territory at least twice during a single breeding season. The Eastern Wood-Pewee likely bred in the majority of blocks in which it was reported.

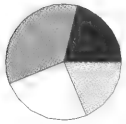


## Breeding Evidence

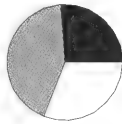
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	212	21.2	26.1	248	19.3
Probable	348	34.9	42.9	414	32.2
Possible	252	25.3	31.0	294	22.9
Totals	812	81.4	100.0	956	74.3

\* 998 priority blocks

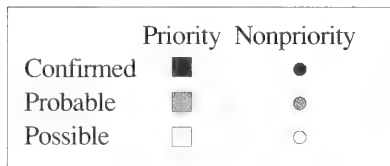
\*\* 1,286 total blocks (priority and nonpriority)



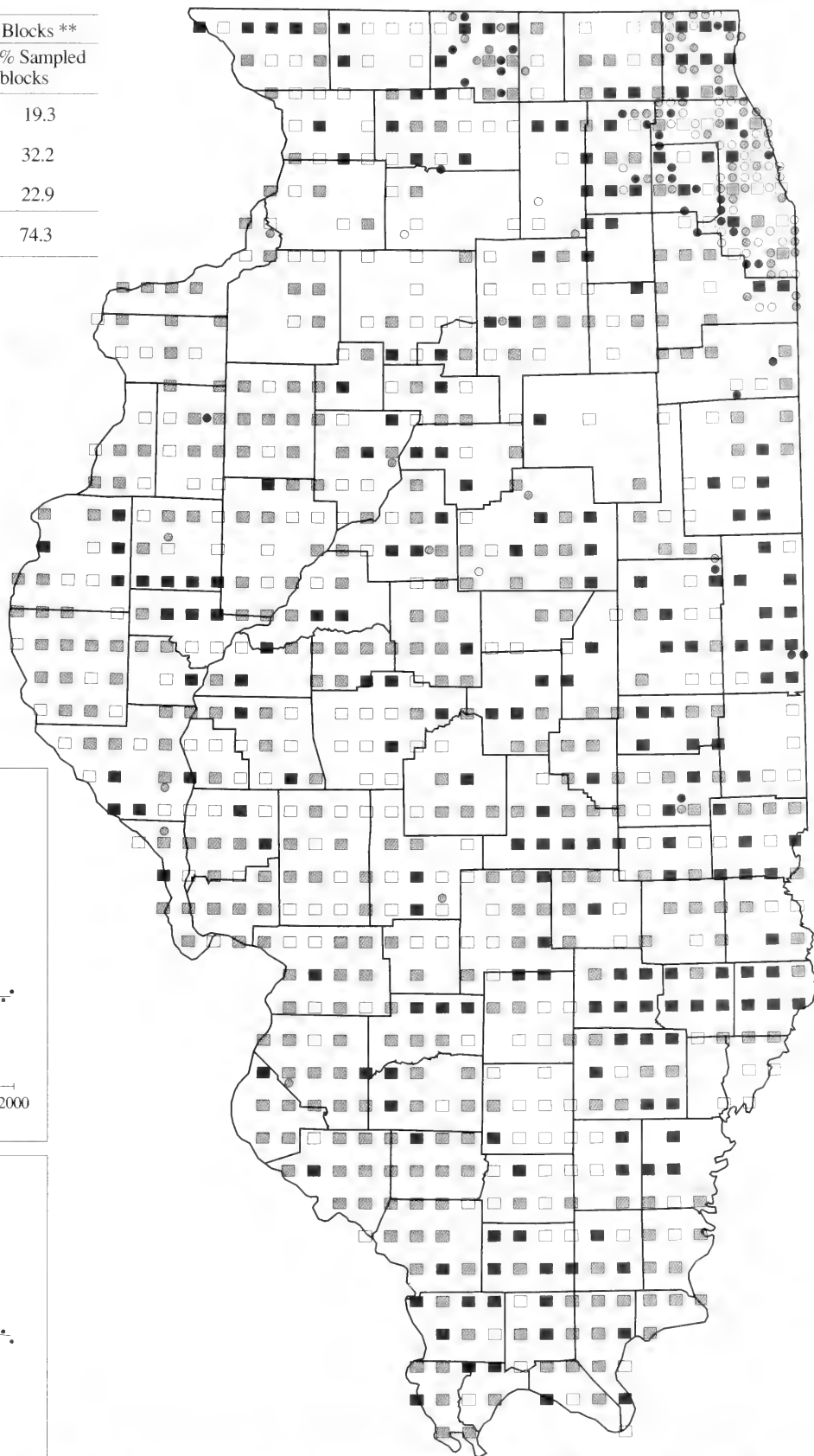
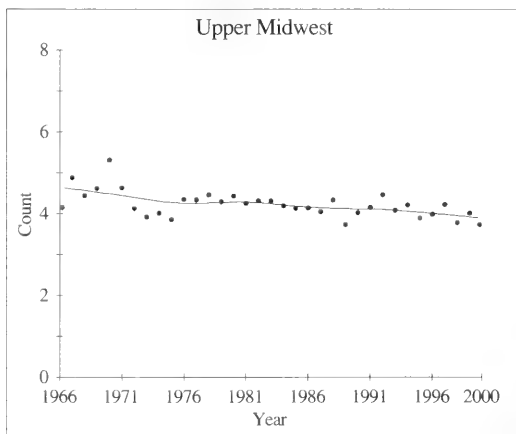
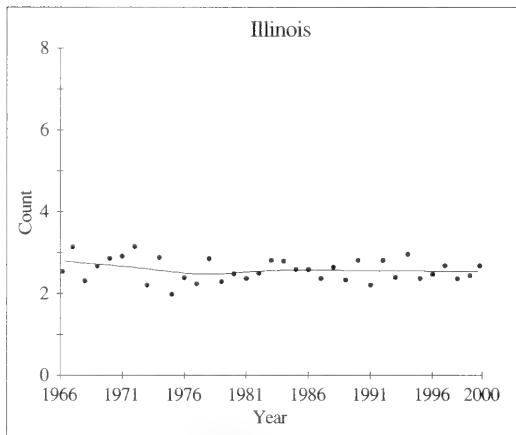
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



***Eastern Wood-Pewee***

## Acadian Flycatcher

## *Empidonax virescens*



Joe Milosevich

### Code: ACFL

**Range Distribution:** eastern U.S., south to northwestern South America.

### ILLINOIS

**Abundance:** common migrant and summer resident in southern Illinois, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous bottomland and upland forests, swamps, riparian thickets, and wooded ravines.

**Nest:** a ragged, thin, shallow cup of bark, twigs, weed stems, and grass lined with finer materials, well out on a horizontal sapling branch; distinctive streamer of vegetation hanging from bottom of nest.

**Eggs:** 3, creamy white, spotted with browns.

**Incubation:** 14 days.

**Fledging:** from 13 to 15 days.

Acadian Flycatchers are interior woodland species that breed in the eastern half of the U.S., especially in the southern states. This species is hard to visually distinguish from the other flycatchers in the genus *Empidonax*. During the breeding season, however, it is the only one likely to be encountered in large bottomland forests and swamps with dense understory, especially along streams and in damp ravines. Their distinctive songs are the best clue to detecting this species' presence. The most common song is an explosive "pizza" and the second is a prolonged trill made while the male is entranced in a fluttering, circular flight. The Acadian nests in the understory of bottomland forests and places its nest near the end of a horizontal limb of a sapling,

often over water, a trail, or a road. The Acadian's diet consists mostly of insects captured on the wing and gleaned from vegetation. In its breeding range this species is impacted by loss, fragmentation, and decreased size of forests in addition to nest parasitism by Brown-headed Cowbirds (Whitehead and Taylor 2002).

### Illinois History

A century ago the Acadian Flycatcher was considered to be "the most numerous and generally distributed species of the genus in the state" (Ridgway 1889) and "a rather common summer resident throughout Illinois" (Cory 1909). Graber et al. (1974) reported that there was an apparent decline in the north during the 1930s and that by the 1970s it was common in southern and central Illinois but rather rare in the north. During the early 1960s, there was a modest resurgence in the north (Petersen 1964).

### Breeding Bird Survey Trends

For the Acadian Flycatcher the trend for the Illinois population is estimated at  $-2.1\%$  per year (nonsignificant,  $P = 0.20$ ) for 1966–2000. The upper Midwest population decreased at an annual rate of  $-2.0\%$  (significant,  $P = 0.01$ ) over the same 35-year sample period. The BBS does not adequately sample interior riparian forests, the preferred habitat of the Acadian Flycatcher.

*Credibility Index:* IL = 2 and UM = 2.

### Distribution

The Acadian Flycatcher was reported in priority blocks in 81 counties during the atlas project. It was most frequently encountered in the southern half of the state. Since this species prefers large forested areas, its distribution may be a reflection of this preference (Blake and Karr 1987). It is possible that this species nests in every Illinois county (Graber et al. 1974).

### Frequency

The Acadian Flycatcher was reported from 306 (30.7%) priority blocks and another 21 nonpriority blocks. It was Confirmed as breeding in 83 (8.3%) of the priority blocks. Finding nests for this species is difficult. The primary evidence criteria used for Confirmed records in priority blocks were occupied nest (20 ON records), nest building (18 NB records), nest with eggs (14 NE records), and adults feeding young (11 FY records). Owing to the territorial nature of this species, it is likely that nesting may have occurred in many of the blocks in which it was recorded.

## Breeding Evidence

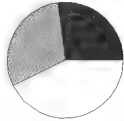
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	83	8.3	27.1	91	7.1
Probable	92	9.2	30.1	99	7.7
Possible	131	13.1	42.8	137	10.7
Totals	306	30.7	100.0	327	25.4

\* 998 priority blocks

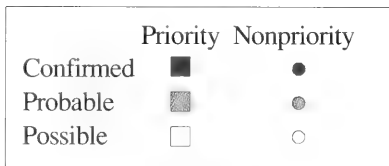
\*\* 1,286 total blocks (priority and nonpriority)



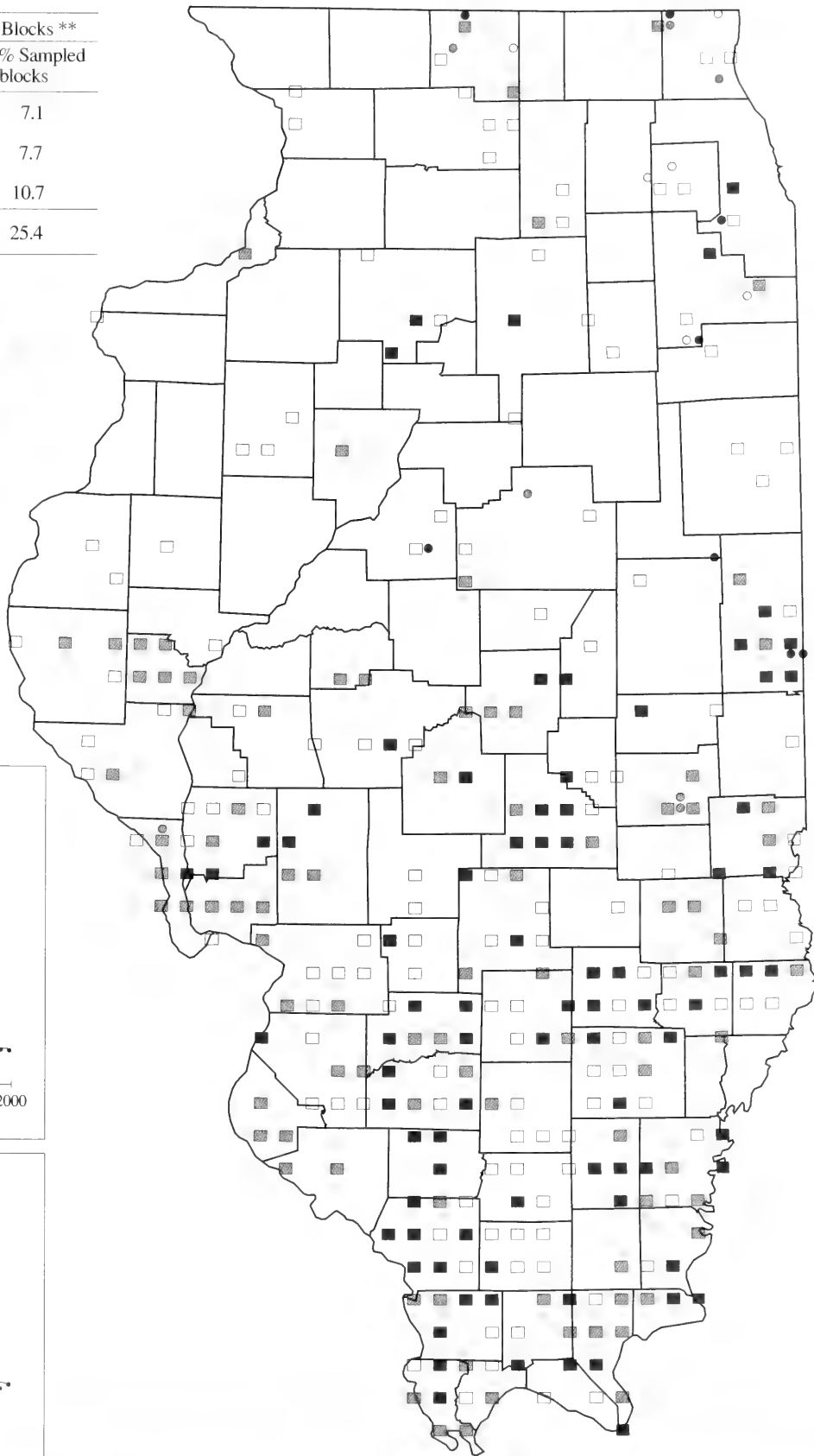
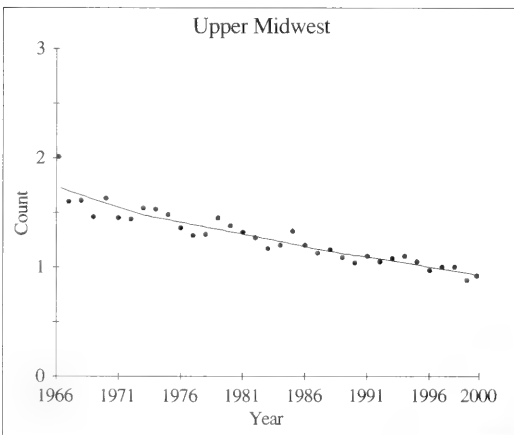
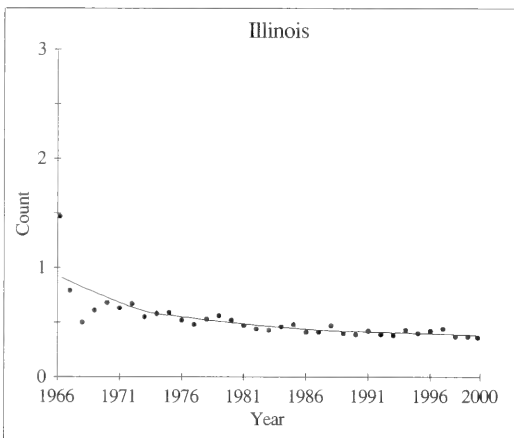
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



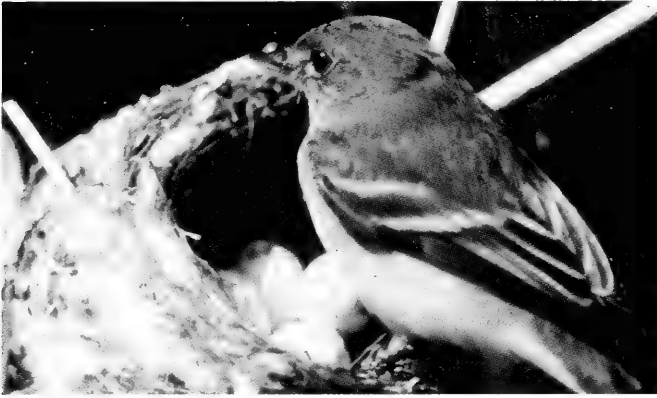
## Breeding Bird Survey Trends



**Acadian Flycatcher**

## Alder Flycatcher

## *Empidonax alnorum*



Chicago Academy of Sciences

**Code:** ALFL

**Rangewide Distribution:** eastern Alaska and most of Canada, south through the eastern U.S. to northern South America.

**ILLINOIS**

**Abundance:** fairly common migrant, very rare summer resident in north.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** alder and willow swamps and thickets, bogs.

**Nest:** an untidy, loose cup of bark, weed stems, and grass lined with finer materials.

**Eggs:** 3–4, white, with brown spots near the larger end.

**Incubation:** 12–13 days.

**Fledging:** about 13–14 days.

Except for its three-syllable “fee-bee-o” song, the Alder Flycatcher is virtually indistinguishable from the Willow Flycatcher in the field. Until the 1970s they were considered to be the same species, the Traill’s Flycatcher. The breeding range of the Alder Flycatcher is more northern than the Willow Flycatcher’s. Alder Flycatchers breed in much of Canada and the northeastern U.S. from Minnesota to Maine.

Where the two species coexist they may sometimes be distinguished by their habitat preferences. The Alder usually chooses wet thickets and brushy wetlands with tall, dense vegetation (Zink and Fall 1981) and is less likely to breed in the drier, more open upland settings. The Alder’s nest is more loosely constructed, like that of the Song Sparrow or Indigo Bunting, and placed low to the ground (1–3 feet) while the Willow’s is more compact, comparable to that of a Yellow Warbler or goldfinch, and placed 3–10 feet above the ground (Brauning 1992; Peterjohn and Rice 1991). Alder Flycatchers perch in shrubs, darting out to catch flying insects; they also glean insects and spiders from vegetation.

**Illinois History**

In Illinois the Alder Flycatcher had virtually no records as a species until 1973, when it became recognized as a full species. Alder Flycatchers typically nest north of Illinois.

**Breeding Bird Survey Trends**

Adequate BBS data are not available for the Alder Flycatcher in Illinois. For the upper Midwest, the population of this species is estimated to have increased at an annual rate of 1.4% (significant,  $P = 0.02$ ) from 1966 to 2000.

*Credibility Index:* IL = none and UM = 1.

**Distribution**

Illinois is at the extreme southern tip of the Alder Flycatcher’s breeding range. Atlas records for this species were limited to the northern part of the state.

**Frequency**

The Alder Flycatcher was reported from six (0.6%) priority blocks and nine nonpriority blocks. Breeding was not Confirmed in any block. Because this species is a notoriously late spring migrant and males regularly sing their territorial songs while migrating to their nesting grounds, atlas records may have been of migrating birds. Interestingly, the reports of territorial males suggest that breeding may have been attempted. Since the Alder and Willow flycatchers look alike, misidentifications are very possible and the atlas data for these two species may not be totally accurate.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	0	0.0	0.0	0	0.0
Probable	4	0.4	66.7	9	0.7
Possible	2	0.2	33.3	6	0.5
Totals	6	0.6	100.0	15	1.2

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

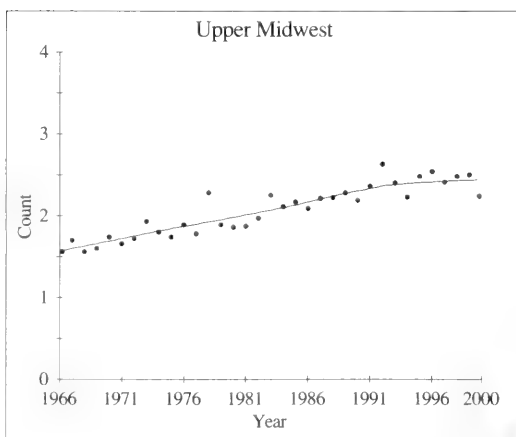


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Alder Flycatcher**



Walter Marcisz

**Code:** WIFL

**Rangewide Distribution:** extreme southern Canada, south through most of the U.S. to central South America.

**ILLINOIS**

**Abundance:** fairly common migrant and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** swamps and streamside thickets (especially willows), more open habitats than Alder Flycatcher.

**Nest:** a compact cup of bark, weed stems, and grass lined with finer materials, in an upright or slanting fork.

**Eggs:** 3–4, buff (occasionally white), with brown spots near the larger end.

**Incubation:** 12–13 days.

**Fledging:** from 12 to 14 days.

The breeding range of the Willow Flycatcher is generally the northern two-thirds of the U.S. and extreme southern Canada. At one time the Willow Flycatcher and the Alder Flycatcher were considered to be one species, the Traill's Flycatcher, but were split into two species by the American Ornithologists' Union in 1973. These two species are difficult to distinguish except by song. The Willow Flycatcher can be identified by its two-syllable song, "fitz-bew." Although both the Willow and Alder Flycatcher occur in

Illinois, the Willow breeds in the state and the Alder, a late spring and early fall migrant through the state, has yet to be confirmed as breeding in Illinois. During the breeding season, the Willow inhabits moist shrubby areas such as thickets of willows or young trees along the edges of wetlands or near streams, and upland brushy areas such as hedgerows and roadsides. Willow Flycatchers eat insects that they catch on the wing or less often by gleaning from vegetation.

**Illinois History**

Late nineteenth and early twentieth century accounts indicate that the Traill's [Willow] Flycatcher was a fairly common summer resident (Ridgway 1889; Cory 1909). It was once considered a species associated with orchards (Ridgway 1889; Barnes 1890) but that is no longer evident. Willow Flycatchers have adapted to strip-mined land, especially in east-central Illinois (Karr 1968), perhaps indicating this species may opportunistically move from areas where habitat has been lost or destroyed to new shrubby habitats.

**Breeding Bird Survey Trends**

Trend estimates for the Willow Flycatcher are -1.0% per year (nonsignificant,  $P = 0.39$ ) for Illinois and -0.7% per year (nonsignificant,  $P = 0.18$ ) for the upper Midwest for 1966–2000.

*Credibility Index:* IL = 2 and UM = 2.

**Distribution**

The Willow Flycatcher was encountered in priority blocks more frequently in the northern and eastern parts of the state. This species was reported in priority blocks in 89 counties and possibly occurs as a breeding species in every county.

**Frequency**

The Willow Flycatcher was reported from 406 (40.7%) priority blocks and 116 nonpriority blocks. Breeding was Confirmed in 82 (8.2%) of the priority blocks. The most frequently used breeding evidence criteria for Confirmed records were adults feeding young (23 FY records), occupied nest (15 ON records), nest building (14 NB records), nest with eggs (12 NE records), and fledged young (10 FL records). It is likely that nesting occurred in many of the blocks in which it was recorded.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	82	8.2	20.2	117	9.1
Probable	160	16.0	39.4	218	17.0
Possible	164	16.4	40.4	187	14.5
Totals	406	40.7	100.0	522	40.6

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



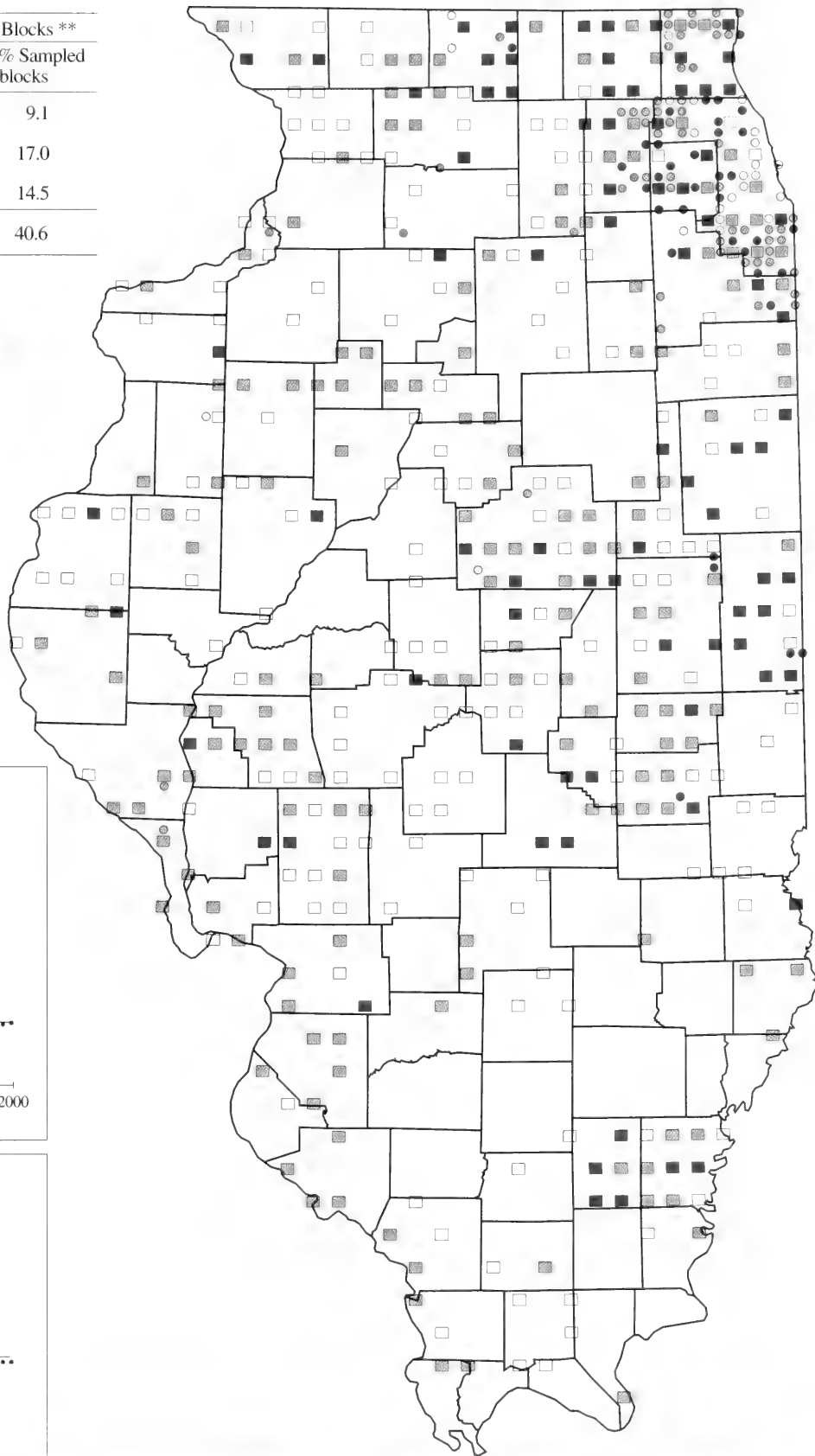
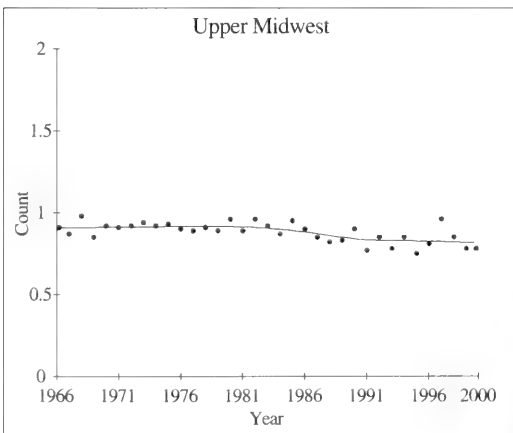
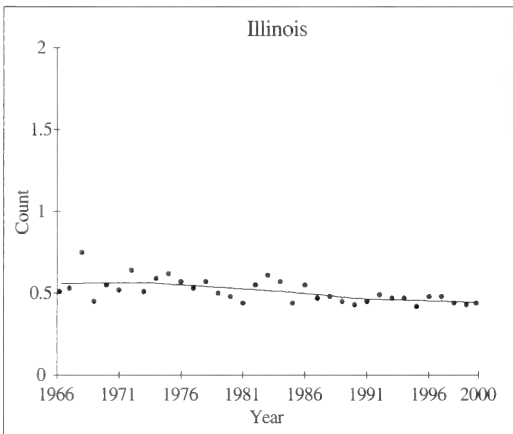
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○

## Breeding Bird Survey Trends



**Willow Flycatcher**





Dennis Oehmke

**Code:** LEFL

**Rangewide Distribution:** southern half of Canada, U.S. east of the Rockies, south to Panama.

**ILLINOIS**

**Abundance:** common migrant and rare summer resident, decreasing southward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open deciduous woodlands or brushy areas with scattered trees.

**Nest:** a compact cup of bark, weed stems, and grass lined with finer materials, on a horizontal tree limb.

**Eggs:** 4, creamy white, unmarked.

**Incubation:** 13–14 days.

**Fledging:** from 12 to 16 days.

The Least Flycatcher, the smallest of the North American flycatchers, is common and widespread across the northern U.S. and much of Canada. During the breeding season, it prefers forest edges, open woodland habitats, shrubby areas, and second-growth habitats. Nests are placed in an upright crotch or on a horizontal limb about 10 to 40 feet above ground near the trunk. Except for the persistent singing of its song, “che-bek,” throughout the breeding season, this small drab-colored bird would probably go undetected. Least Flycatchers are noted for aggressive defense of their territories and nests, perhaps leading to relatively low rates of nest

parasitism by Brown-headed Cowbirds (Briskie 1994). As with other flycatchers, this species perches, waiting for prey, and catches flying insects in the air.

**Illinois History**

Ridgway (1889) indicated that the Least Flycatcher in Illinois “is a summer resident in the northern portions . . . but the southern limit of its breeding range is unknown.” Cory (1909) notes that it was a rather common summer resident in the northern part of the state. However, by the mid-1950s, it was described as “an uncommon summer resident, formerly more common” (Ford 1956). Graber et al. (1974) believed that records attributed to being summer occurrences in central Illinois lacked substantiation and were probably late migrants. This may be true of some of the atlas data as well since many records were one-time occurrences of singing males.

**Breeding Bird Survey Trends**

For Illinois, the trend is estimated at  $-1.0\%$  per year (nonsignificant,  $P = 0.85$ ) for 1966–2000, but this species was found on few routes and in low numbers. For the upper Midwest, which includes a substantial portion of the breeding range, the population declined during 1966–2000 at an annual rate of  $-1.8\%$  (significant,  $P < 0.01$ ).

*Credibility Index:*  $IL = 3$  and  $UM = 1$ .

**Distribution**

The Least Flycatcher was a rare breeding species in Illinois during the atlas project. Since Illinois is at the southern edge of its breeding range, most breeding records would be expected in the northern part of the state. Most of the records in central Illinois could reasonably be considered late-spring migrants, although there are records prior to the atlas project of summer occurrences in central Illinois. A small breeding population was reported at Lowden-Miller State Forest in Ogle County in the mid-1990s (S. Bailey, pers. comm.).

**Frequency**

The Least Flycatcher was reported from 24 (2.4%) priority blocks and 22 nonpriority blocks. It was Confirmed as breeding in 2 of the priority blocks (one observation of nest building in Adams County and one of nest with young in Will County). It is possible that nesting may have occurred in the blocks where observations were recorded after mid-June. Atlas records prior to mid-June may be late-spring migrants.

## Breeding Evidence

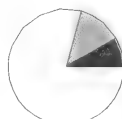
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	2	0.2	8.3	3	0.2
Probable	3	0.3	12.5	12	0.9
Possible	19	1.9	79.2	31	2.4
Totals	24	2.4	100.0	46	3.6

\* 998 priority blocks

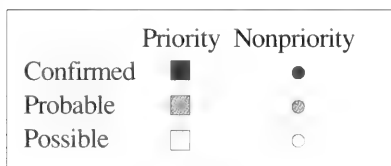
\*\* 1,286 total blocks (priority and nonpriority)



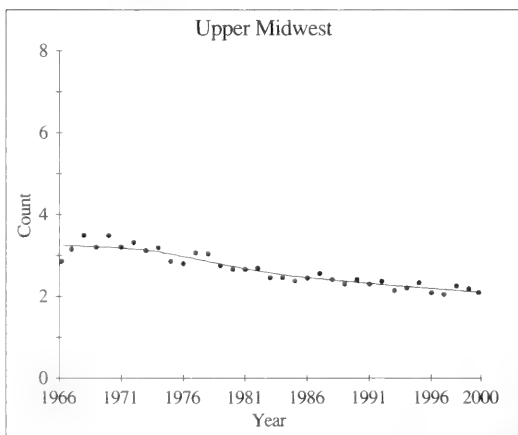
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Least Flycatcher**



Richard Day / Daybreak Imagery

**Code: EAPH**

**Rangewide Distribution:** central and southeastern Canada and the eastern half of the U.S., south through eastern Mexico.

**ILLINOIS**

**Abundance:** common migrant, fairly common summer resident, rare winter resident in south.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open and riparian woodlands, rocky ravines, bridges near wooded streams.

**Nest:** a cup of mud pellets, moss, and plant fibers lined with finer materials, often under a bridge, on a porch or overhanging ledge.

**Eggs:** 4–5, white, mostly unmarked (some with small brown spots).

**Incubation:** 16 days.

**Fledging:** from 15 or 16 days.

population in terms of numbers and breeding range (Weeks 1994). Threats to the Eastern Phoebe population in its breeding range include nest parasitism by Brown-headed Cowbirds and severe winter or early spring weather (Jackson et al. 1996).

**Illinois History**

The Eastern Phoebe, the first flycatcher to return to Illinois in the spring, must have been less common prior to the arrival of Euro-American settlers. Its current distribution is largely the result of its adaptation to nesting on man-made structures. In the late 1800s and early 1900s it was already an abundant summer resident (Cory 1909) and in the mid-1950s it was still described as a common summer resident (Ford 1956; Smith and Parmalee 1955). At present, it is considered an uncommon (Bohlen 1989) to fairly common summer resident.

**Breeding Bird Survey Trends**

According to BBS data, Eastern Phoebe populations in Illinois and the upper Midwest experienced an increase for the period 1966–2000. Trend estimates for this period are 4.3% per year (significant,  $P < 0.01$ ) for Illinois and 2.3% per year (significant,  $P < 0.01$ ) for the upper Midwest. The state and regional trend estimates were negative from 1966 to 1979, but significantly positive from 1980 to 2000.

*Credibility Index: IL = 2 and UM = 2.*

**Distribution**

During the atlas project, the Eastern Phoebe was reported in priority blocks in all but three counties. It probably nests in every county. This species was concentrated in priority blocks in the southern and western parts of the state. Phoebes are likely present where suitable nesting habitat and woodland streams coexist.

**Frequency**

The Eastern Phoebe was reported from 608 (60.9%) priority blocks and 62 nonpriority blocks. Breeding was Confirmed in 390 (39.1%) of the priority blocks, with the most frequently used breeding evidence criteria being occupied nest (128 ON records), used nest (88 UN records), nest with eggs (57 NE records), and nest with young (47 NY records). Because this species is easy to detect and identify, Phoebes were rarely missed in blocks where they occurred, even those blocks that were surveyed for only a few hours on a single day.

The breeding range of the Eastern Phoebe includes central and southeastern Canada and the U.S. east of the Rockies. It is one of the earliest migrants to nest in the northern U.S. and southern Canada. The Eastern Phoebe announces its presence with its familiar “fee-bee” call and is easily recognized by the bobbing of its tail. It is found mostly in rural areas where there is water and woody cover; this includes upland and riparian forests, edge habitat, and areas with scattered trees. Phoebes often nest on buildings and under bridges instead of their natural nesting habitat, which is generally rock ledges protected by an overhang. The acceptance of man-made structures for nesting sites has benefited the Eastern Phoebe

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	390	39.1	64.1	422	32.8
Probable	84	8.4	13.8	97	7.5
Possible	134	13.4	22.0	151	11.7
Totals	608	60.9	100.0	670	52.1

\* 998 priority blocks

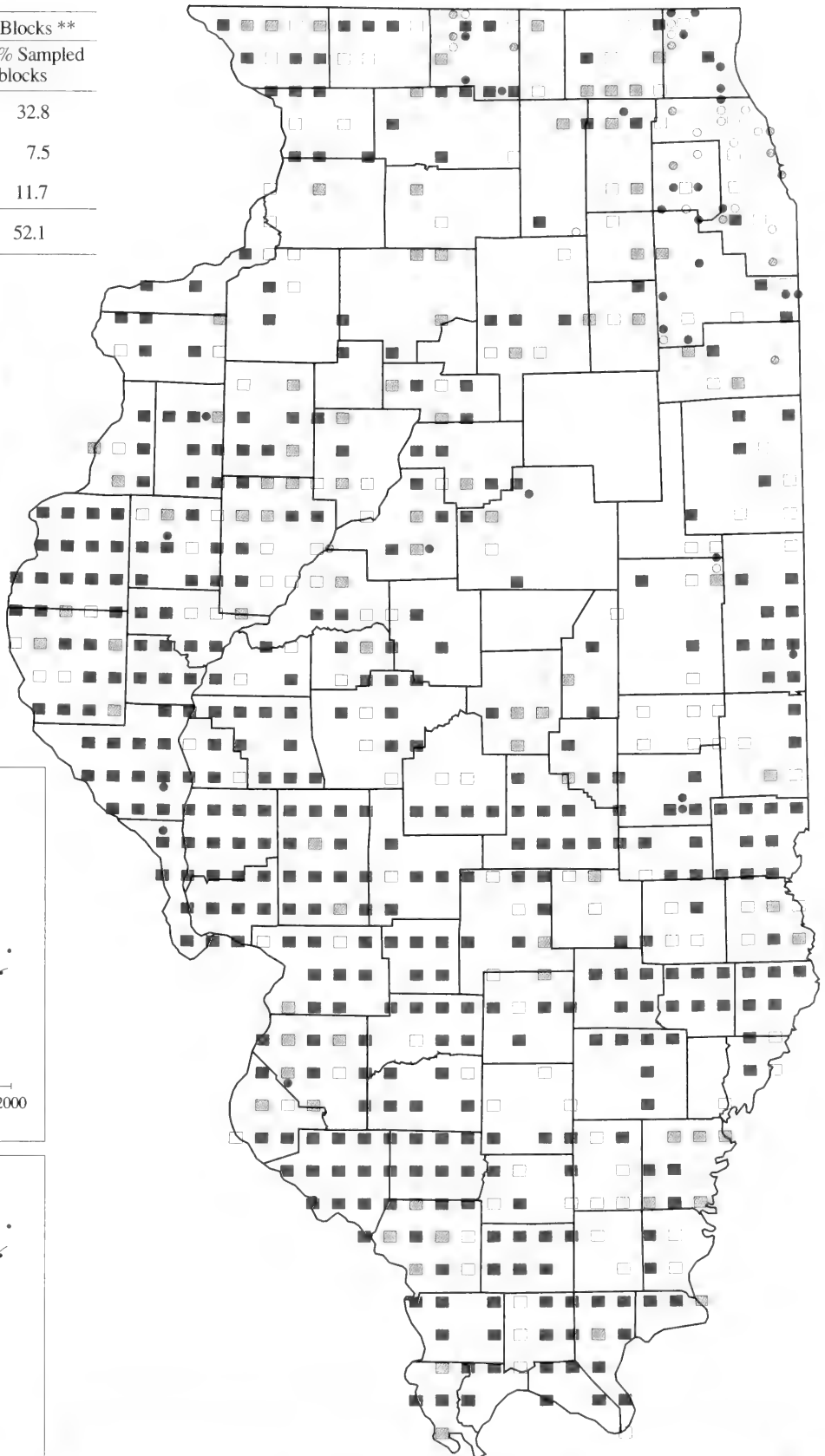
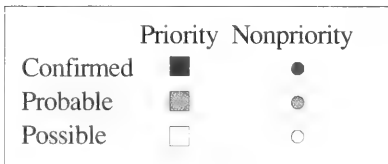
\*\* 1,286 total blocks (priority and nonpriority)



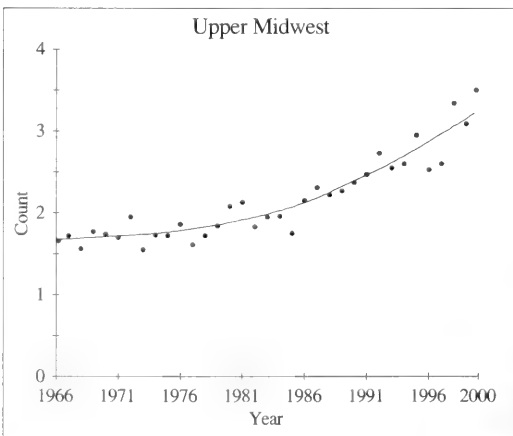
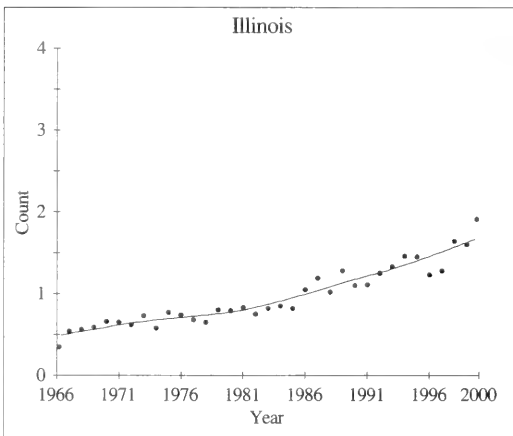
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



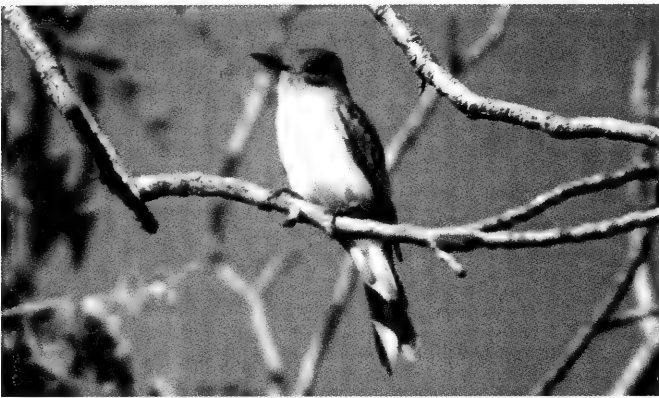
## Breeding Bird Survey Trends



**Eastern Phoebe**

# Great Crested Flycatcher

# *Myiarchus crinitus*



Robert Randall

**Code:** GCFL

**Rangewide Distribution:** eastern U.S. and adjacent southern Canada, south to northwestern South America.

**ILLINOIS**

**Abundance:** common migrant and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open deciduous forests and woodlands, and parks.

**Nest:** a tree cavity (sometimes a nest box) lined with leaves, fur, feathers, and other available materials, especially snake skins.

**Eggs:** 5, creamy white or buff, marked with browns, olive, or lavender.

**Incubation:** 13–15 days.

**Fledging:** from 12 to 21 days.

The Great Crested Flycatcher is common in its breeding range, which includes extreme southeastern Canada and the Great Plains to the Atlantic coast in the U.S. It inhabits forest edges and a wide size range of open upland and bottomland forests. It most often occurs in the upper canopy of trees, with a preference for oaks. Its loud and frequent “wheep” call is easily identified and a common summer sound in woodlands. Cresteds nest in existing tree cavities or well-placed nest boxes; they have the unique habit of sometimes including shed snake skin as part of the nest (Bohlen 1989). It has been suggested that they compete for nesting cavities with House Sparrows, European Starlings, Red-

headed Woodpeckers, and Red-bellied Woodpeckers; however, such competition may be low because Cresteds nest more often in cavities in live trees or dead limbs in live trees than the other species (Stauffer and Best 1982). This species is almost exclusively insectivorous and obtains its food by flycatching and gleaning insects from vegetation. Great Crested Flycatchers are probably not as common as they were prior to the arrival of the European Starling, but have benefited from the increased amount of edge habitat created by forest fragmentation.

**Illinois History**

In the 1800s the Great Crested Flycatcher was considered to be “a regular although not a common summer resident in northern Illinois . . . more numerous in southern Illinois” (Cory 1909). Since then, it has been described as a common summer resident throughout the state (Smith and Parmalee 1955; Bohlen 1989).

**Breeding Bird Survey Trends**

For 1966–2000 the trend estimates for the Great Crested Flycatcher populations in Illinois and the upper Midwest are –0.5% (nonsignificant,  $P = 0.34$ ) and –0.3% per year (nonsignificant,  $P = 0.30$ ), respectively.

*Credibility Index:* IL = 1 and UM = 2.

**Distribution**

Great Crested Flycatchers were reported in priority blocks in all but one county during the atlas project. It was widely distributed throughout the state but less frequent in the heavily agricultural parts of the state. This flycatcher should be present in many mature and second-growth forests as well as older, larger woodlots, including city parks.

**Frequency**

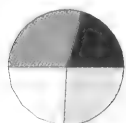
The Great Crested Flycatcher was reported from 742 (74.3%) priority blocks and 125 nonpriority blocks. This species was Confirmed as breeding in 208 (20.8%) of the priority blocks, mostly by observations of adults feeding young, occupied nest, and fledged young (73 FY, 67 ON, and 44 FL records, respectively). The Crested’s distinctive call is the main means of detecting its presence. Finding nests for this flycatcher, as for most forest-dwelling species, is difficult. Because of the territorial nature of this species, it is likely that nesting occurred in the majority of blocks in which it was recorded.

## Breeding Evidence

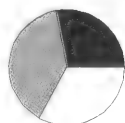
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	208	20.8	28.0	249	19.4
Probable	290	29.1	39.1	352	27.4
Possible	244	24.4	32.9	266	20.7
Totals	742	74.3	100.0	867	67.4

\* 998 priority blocks

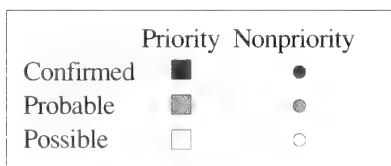
\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

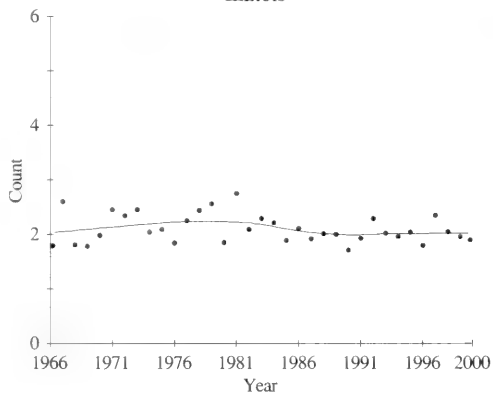


% of priority blocks with records for this species

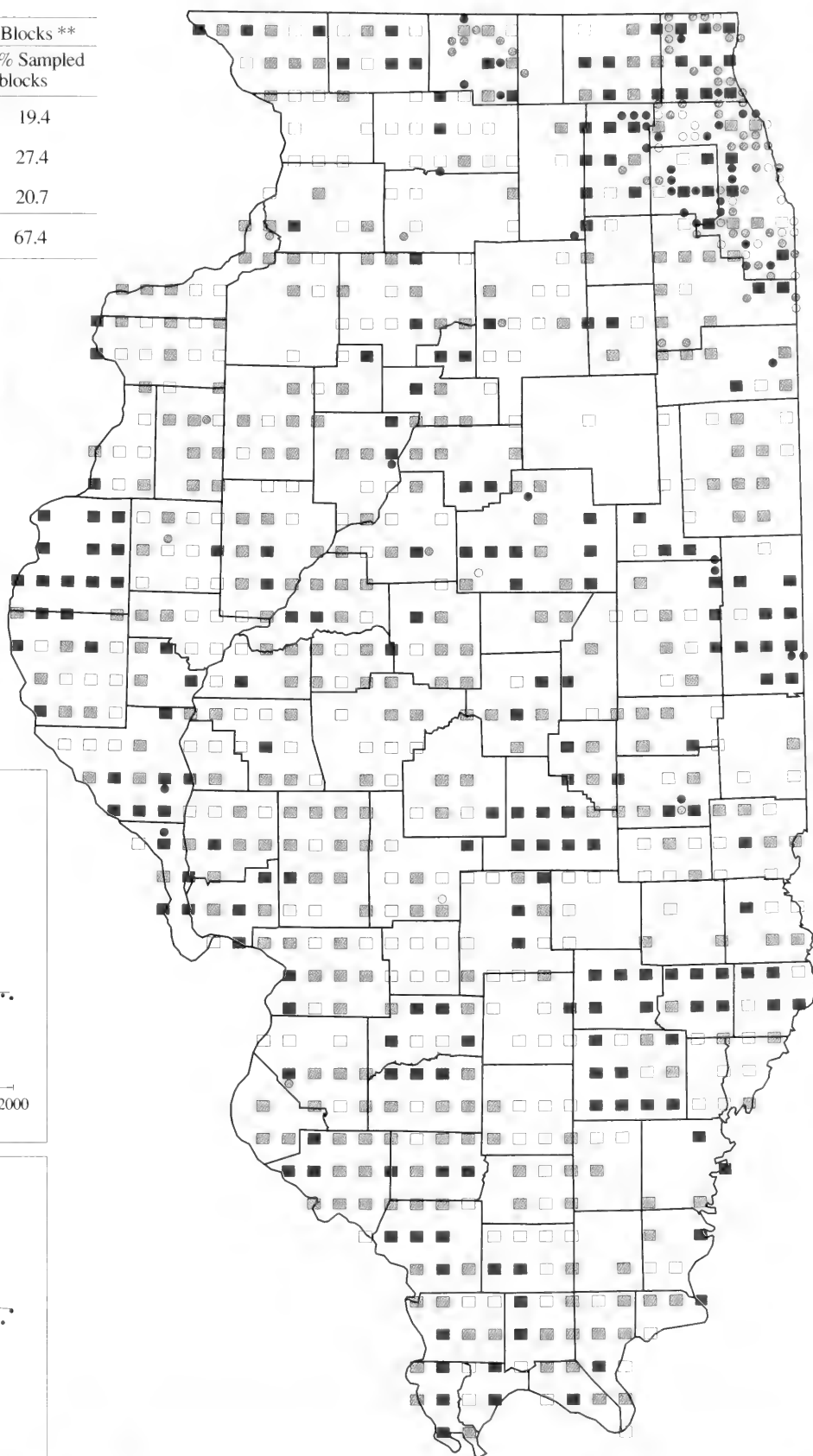
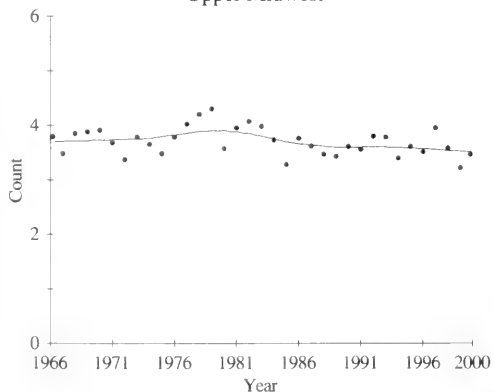


## Breeding Bird Survey Trends

Illinois

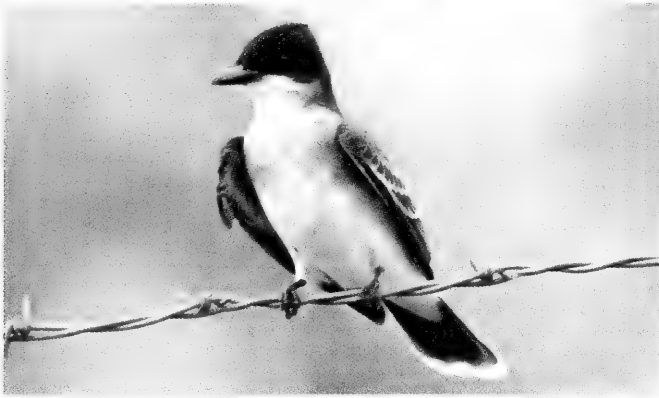


Upper Midwest



**Great Crested Flycatcher**





Dennis Oehmke

**Code: EAKI**

**Rangewide Distribution:** southern half of Canada, south through most of the U.S. to central South America.

**ILLINOIS**

**Abundance:** common migrant and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** forest edge, farmland, and open or riparian woodlands.

**Nest:** a bulky cup of weed stems, grass, and plant down lined with fine grass, rootlets, hair, and feathers, in upper portion of a tree.

**Eggs:** 3–4, white, creamy or pinkish, mottled with browns, olive or lavender (sometimes wreathed).

**Incubation:** 16–18 days.

**Fledging:** from 16 to 18 days.

The Eastern Kingbird breeds in much of Canada and the U.S. except the Southwest. It is a distinctively marked black-and-white bird that perches conspicuously on power and telephone lines and fences. Kingbirds prefer open or semi-open habitats with a scattering of trees, such as pastureland, orchards, shrubby areas, roadsides, and forest edges. The Eastern Kingbird is an aggressive bird that vigorously defends its territory. Its diet is chiefly insects captured on the wing during sallying flights from a conspicuous perch. The

large, somewhat disheveled nests are found on horizontal branches near the top of the canopy in trees in open areas.

**Illinois History**

During the late 1800s and early 1900s, the Eastern Kingbird was a very common bird throughout the state (Ridgway 1889; Cory 1909). The Eastern Kingbird population in 1957 was about half the level of 1909, especially in the south; this decline was attributed to the loss of habitat, especially pastures, orchards, and hedgerows, and the use of pesticides (Graber and Graber 1963).

**Breeding Bird Survey Trends**

Eastern Kingbird populations in Illinois and the upper Midwest experienced declines during the sample period 1966 to 2000. The Illinois trend estimate is  $-2.2\%$  per year (significant,  $P < 0.01$ ) and for the upper Midwest it is  $-1.9\%$  per year (significant,  $P < 0.01$ ). The trend estimates also indicate population declines during both subinterval time periods (1966–1979 and 1980–2000) in the state and the region.

*Credibility Index:* IL = 1 and UM = 2.

**Distribution**

Atlas data indicate that the Eastern Kingbird was uniformly distributed throughout the state. It was found in all 102 counties and Confirmed as breeding in all but one. Because this species is conspicuous and easily identified, gaps in distribution were more likely due to lack of coverage than absence of birds. It was one of the most frequently reported and widely distributed species in priority blocks (Table 4) and the most frequently reported flycatcher species during the atlas project.

**Frequency**

The Eastern Kingbird was reported from 935 (93.7%) priority blocks and 161 nonpriority blocks. Breeding was Confirmed in 557 (55.8%) of the priority blocks. Breeding evidence criteria for about three-fourths of the Confirmed records in priority blocks were adults feeding young (176 FY records), occupied nests (129 ON records), and fledged young (122 FL records). Like other highly territorial species, the Eastern Kingbird probably bred in all the blocks in which it was reported.



## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	557	55.8	59.6	653	50.8
Probable	250	25.1	26.7	290	22.6
Possible	128	12.8	13.7	153	11.9
Totals	935	93.7	100.0	1,096	85.2

\* 998 priority blocks

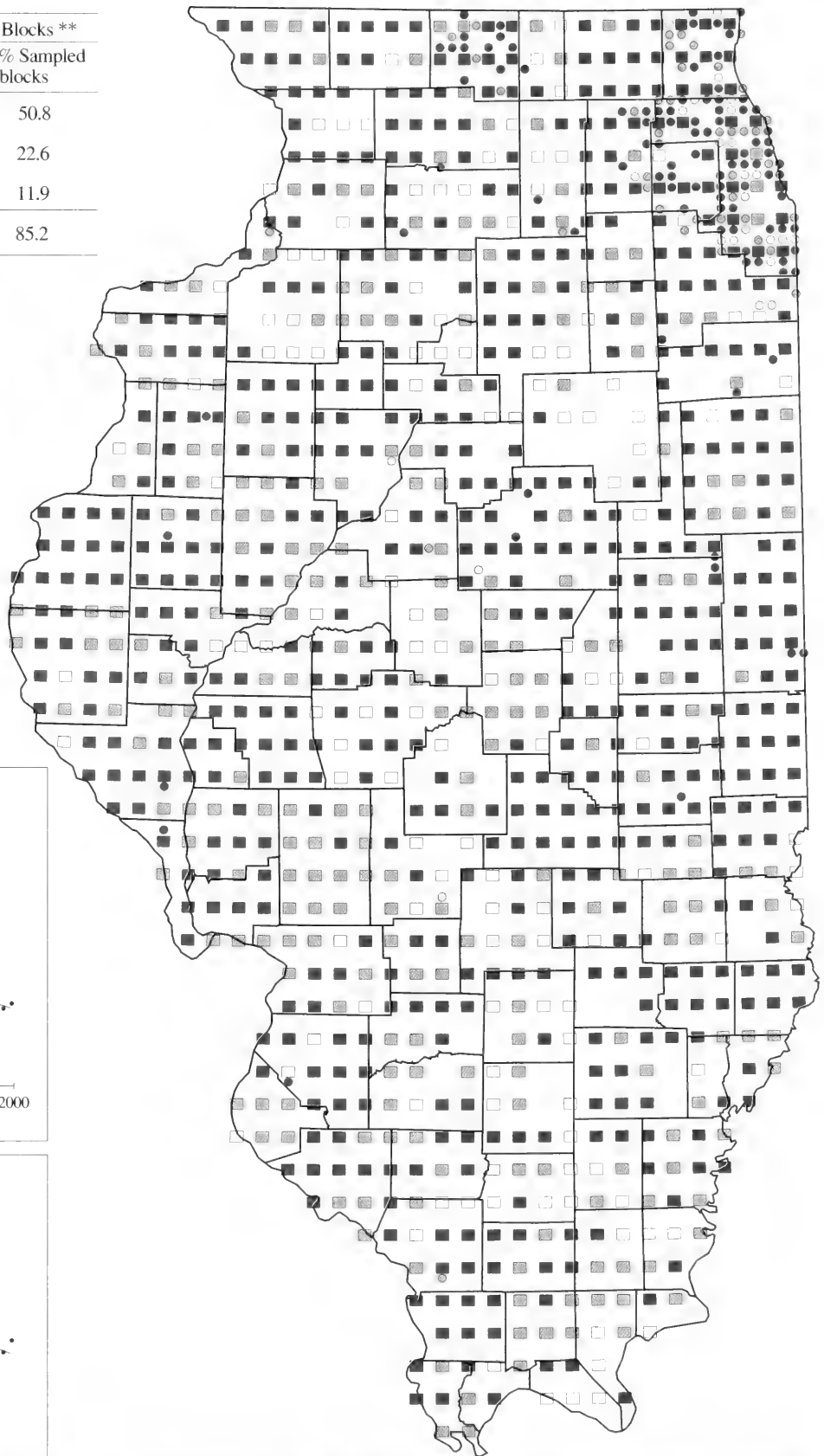
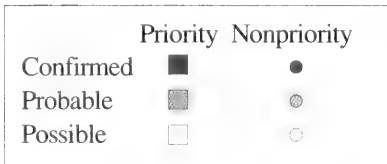
\*\* 1,286 total blocks (priority and nonpriority)



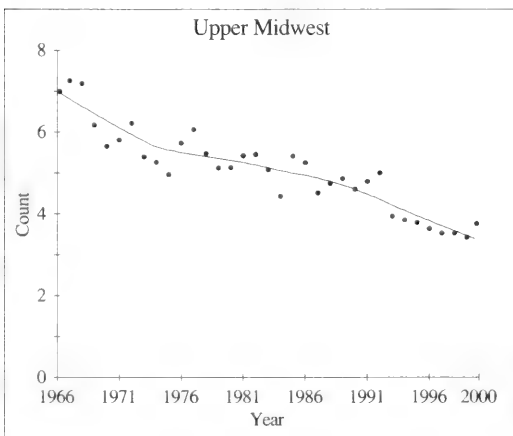
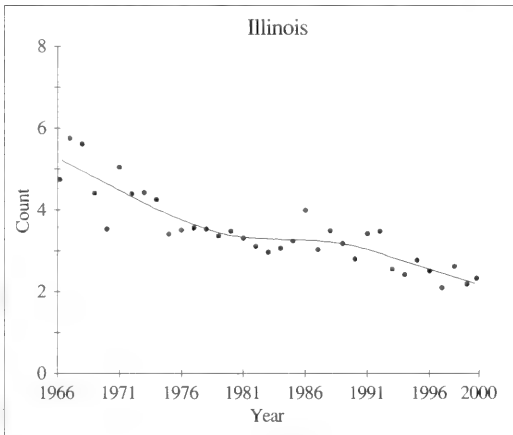
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Eastern Kingbird**

## Loggerhead Shrike

## *Lanius ludovicianus*



Joe Milosevich

**Code:** LOSH

**Range-wide Distribution:** south-central Canada, south through most of the U.S. and Mexico.

**ILLINOIS**

**Abundance:** rare migrant and uncommon to rare summer and winter resident, decreasing northward.

**Endangered/Threatened Status:** threatened

**Breeding Habitat:** open fields with scattered trees, open woodland, and shrubland; thorny trees.

**Nest:** a bulky cup of twigs, forbs, and bark strips woven together and lined with finer materials, in tree.

**Eggs:** 5–6, grayish buff, marked with gray, brown, or black near large end.

**Incubation:** 16–17 days.

**Fledging:** from 17 to 21 days.

The breeding range of the Loggerhead Shrike includes south-central Canada, much of the U.S. except the northeastern and northwestern regions, and Mexico. Shrikes inhabit open country with short vegetation interspersed with hedgerows, scattered trees, and bushes, where they are often seen perching on branches or wires along roadsides, waiting for prey. Loggerhead Shrikes eat large insects, small mammals, birds, reptiles, and amphibians. Hedges and trees that have slender, sharp-pointed thorns, such as Osage orange and honey locust, are used for impaling and caching prey; hence its nickname “butcher bird.” As hedgerows have disappeared, shrikes have increasingly used barbed wire fences for the same purpose. They often utilize Osage orange, honey locusts, red cedars, and rose for nesting because they offer concealment and protection for their nests. Loggerhead Shrike populations have declined throughout North America

in recent decades (Yosef 1996). Loss of grassy pastures and hedgerows due to changing agricultural practices and development in the latter half of the 1900s have contributed to the decline (Graber et al. 1973). Increased use of pesticides such as DDT has been suggested as negatively impacting the population but the shrike population has continued to decline even after these pesticides were banned (Yosef 1996).

**Illinois History**

In early accounts the Loggerhead Shrike was described as “a more or less common species” (Ridgway 1889) and a common summer resident (Cory 1909). In the 1950s it was still a fairly common species in the Chicago region (Ford 1956). Graber et al. (1973) reported that the population had steadily declined in the northern and central portions of Illinois between 1907 and 1957, and by 1973 the entire northern and central population had basically disappeared. The loss of hedgerows and pastures was thought to be the primary reason for its decline at that time. As a result of a dramatic population decline especially between the 1950s and 1970s, the Loggerhead Shrike is listed as a threatened species in Illinois.

**Breeding Bird Survey Trends**

For 1966–2000, the trend estimate for the population in Illinois is  $-4.5\%$  per year (nonsignificant,  $P = 0.10$ ). The upper Midwest population of the Loggerhead Shrike declined from 1966 to 2000 at an annual rate of  $-8.4\%$  (significant,  $P < 0.01$ ).

*Credibility Index:*  $IL = 2$  and  $UM = 2$ .

**Distribution**

Loggerhead Shrikes occurred statewide (they were reported in priority blocks in 80 counties) but were concentrated in the southern and western counties during the atlas project. Records were scattered in the northern and central counties. There is now a fairly large population at the Midewin National Tallgrass Prairie in Will County, which was not reported during the atlas project. Although the northern and central Illinois populations were nearly eliminated by the 1970s, atlas data suggest that local and widely scattered populations are occurring in those parts of the state.

**Frequency**

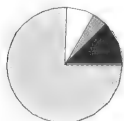
The Loggerhead Shrike was reported from 244 (24.4%) priority blocks and 23 nonpriority blocks. It was Confirmed as breeding in 125 (12.5%) of the priority blocks, mostly by observations of fledged young (59 FL records) and adults feeding young (29 FY records). Breeding was relatively easy to confirm.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	125	12.5	51.2	139	10.8
Probable	42	4.2	17.2	48	3.7
Possible	77	7.7	31.6	80	6.2
Totals	244	24.4	100.0	267	20.8

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



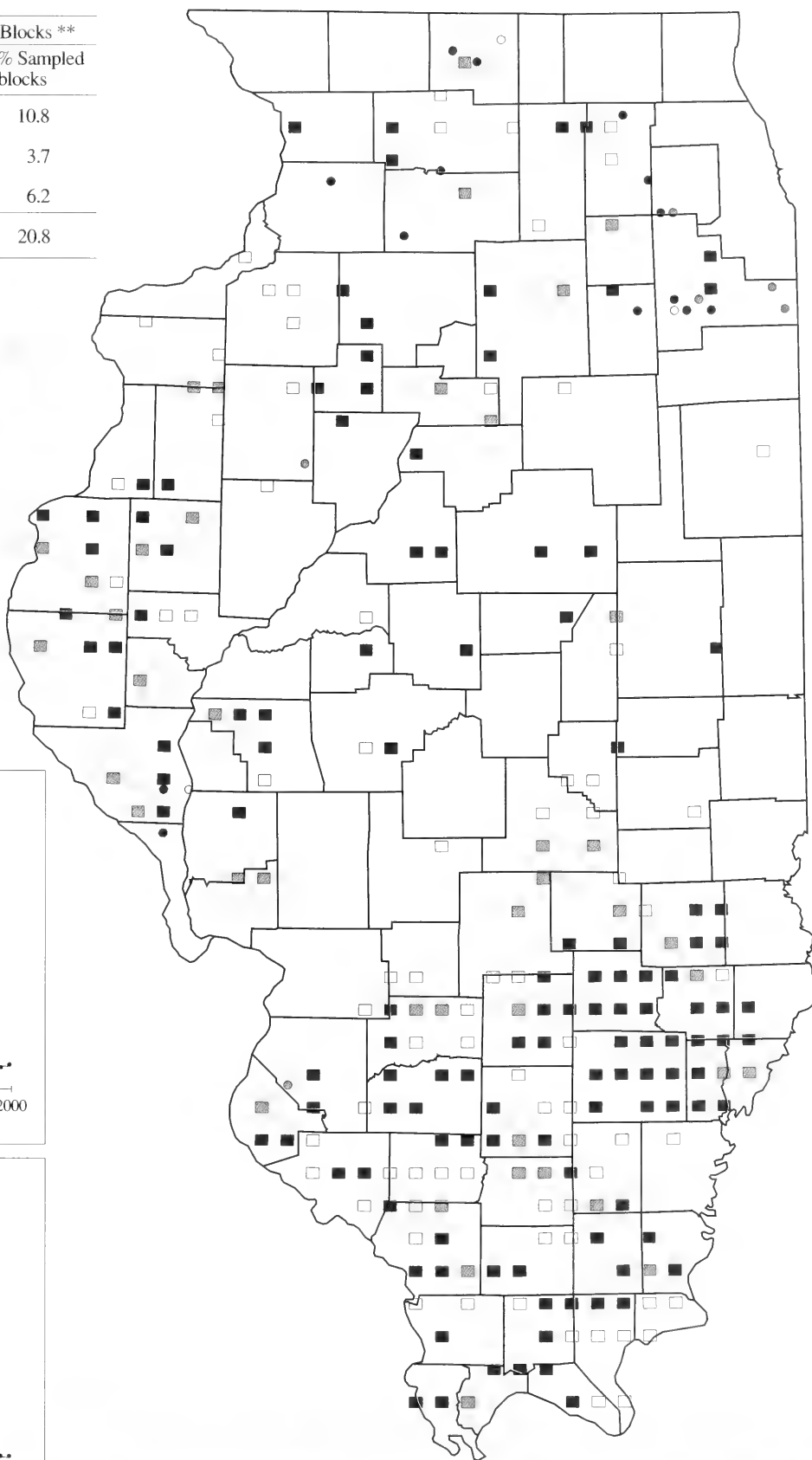
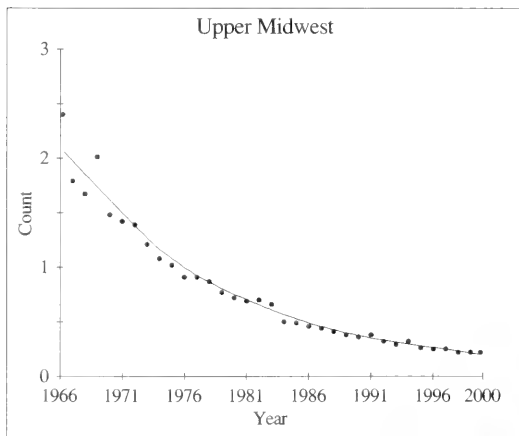
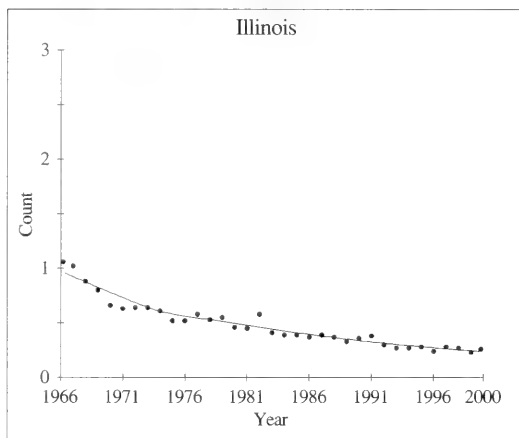
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○

## Breeding Bird Survey Trends



**Loggerhead Shrike**



Todd Fink / Daybreak Imagery

**Code: WEVI**

**Rangewide Distribution:** eastern U.S., south to eastern Central America and the Caribbean Islands.

**ILLINOIS**

**Abundance:** fairly common migrant and summer resident, decreasing northward.

**Endangered/Threatened Status:** none

**Breeding Habitat:** thickets along streams, old brushy fields, early successional forests, and treefall gaps in mature forests.

**Nest:** a cup of twigs, roots, strips of bark, coarse grass, and leaves bound with silk and fiber and lined with finer materials, suspended from a fork in a shrub or sapling.

**Eggs:** 4, white, spotted with brown or black.

**Incubation:** 12–16 days.

**Fledging:** about 9 to 11 days.

The White-eyed Vireo, a common species in its preferred habitat, breeds primarily in the eastern U.S. south of the northern tier of states to eastern Mexico. It inhabits brushy thickets and dense shrubs, unlike most other vireo species that breed in the Midwest. White-eyed Vireos commonly occur in regenerating clear-cuts, overgrown pastures, and brushy woodland margins. Because of its affinity for dense shrubby cover, this bird is more often heard than seen. It has a series of loud songs but is quiet and secretive when close to its nest. Its pendulous cup nest is placed within a few feet of

the ground. Despite being hidden in tangled vegetation, nests are frequently parasitized by Brown-headed Cowbirds. Insects are the main food item, which this vireo searches for at intermediate heights in trees and shrubs.

**Illinois History**

A century ago the White-eyed Vireo was “abundant in suitable localities” (Ridgway 1889) and a “common summer resident in southern Illinois, but of only casual occurrence in northern Illinois” (Cory 1909). It rarely occurred in the Chicago region (Ford 1956). Its population remained fairly stable between 1909 and 1957 (Graber et al. 1985). Currently the Illinois population is concentrated in the southern part of the state but has been increasing in numbers and frequency in central and northeastern Illinois.

**Breeding Bird Survey Trends**

The trend estimate for 1966–2000 for the White-eyed Vireo is  $-1.8\%$  per year (nonsignificant,  $P = 0.23$ ) in Illinois. The population trend estimate for the upper Midwest is  $0.0\%$  per year (nonsignificant,  $P = 0.97$ ) for 1966–2000.

*Credibility Index:* IL = 2 and UM = 2.

**Distribution**

Illinois is at the northern edge of the breeding range of the White-eyed Vireo. During the atlas project, this species was most frequently reported from priority blocks in extreme southern Illinois, with decreasing frequency northward. White-eyed Vireos were reported in priority blocks in about three-fourths of the counties. It still rarely breeds in the western and northwestern portions of the state.

**Frequency**

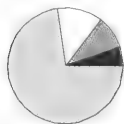
The White-eyed Vireo was reported from 272 (27.3%) priority blocks and 36 nonpriority blocks. Breeding was Confirmed in 54 (5.4%) of the priority blocks. Although White-eyed Vireos were easily recognized by sight and sound, their nests were difficult to locate. This species was Confirmed in 20% of the 272 priority blocks in which it was reported, which is a relatively low rate of confirmation. The most commonly reported breeding evidence for Confirmed records in priority blocks was adults carrying food for young (25 FY records). Like the other highly territorial species, the White-eyed Vireo probably bred in many of the blocks in which it was reported.

## Breeding Evidence

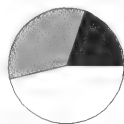
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	54	5.4	19.9	63	4.9
Probable	92	9.2	33.8	112	8.7
Possible	126	12.6	46.3	133	10.3
Totals	272	27.3	100.0	308	24.0

\* 998 priority blocks

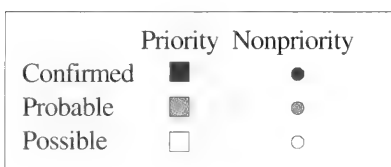
\*\* 1,286 total blocks (priority and nonpriority)



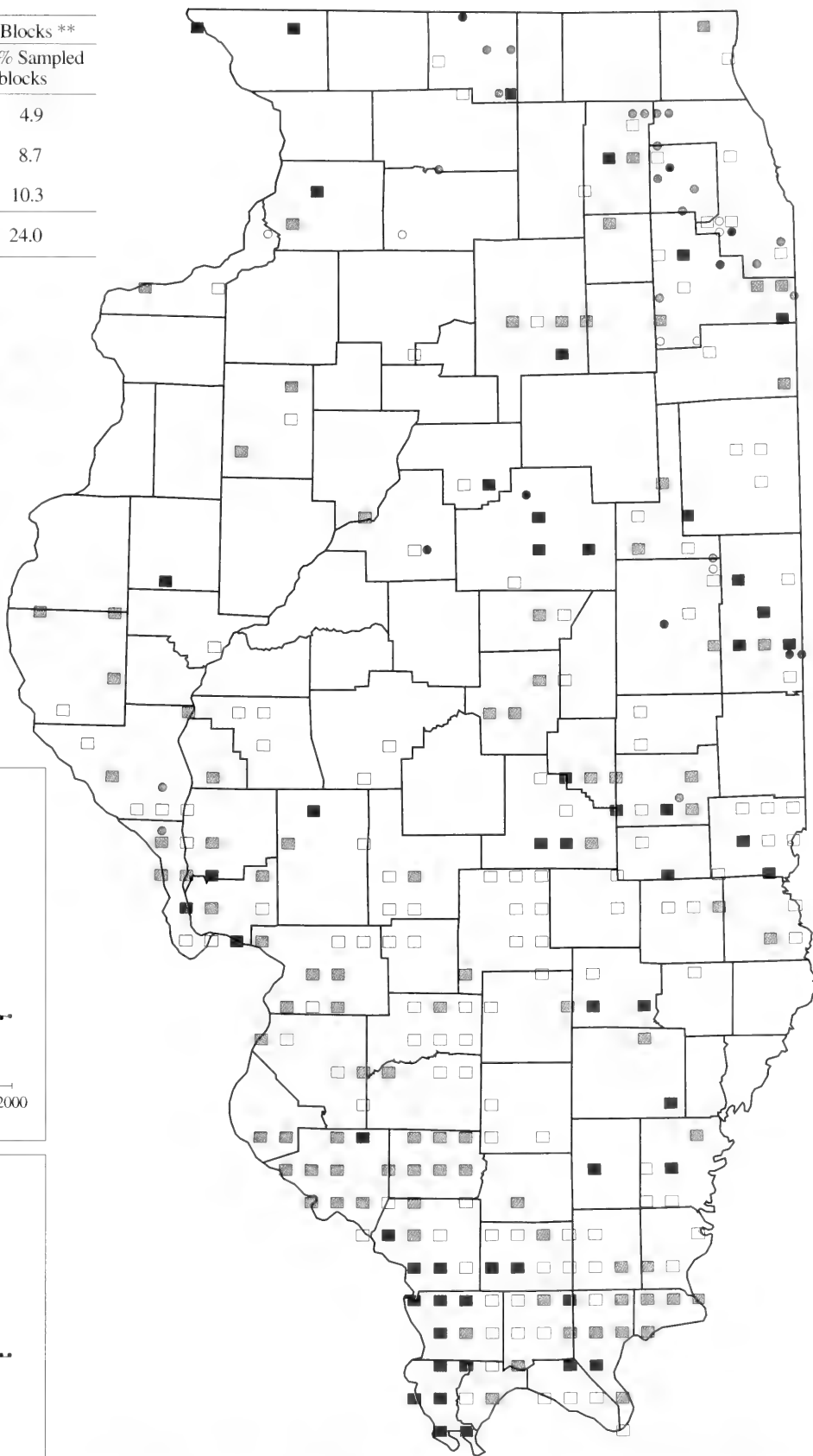
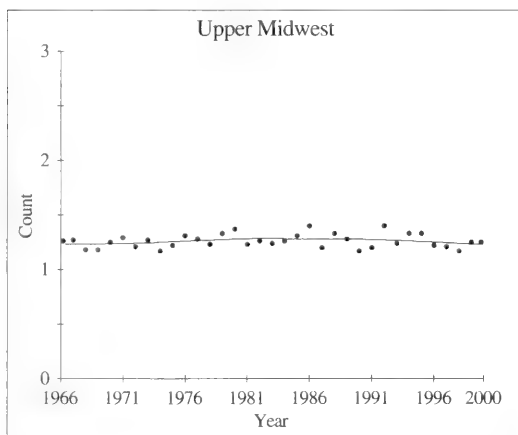
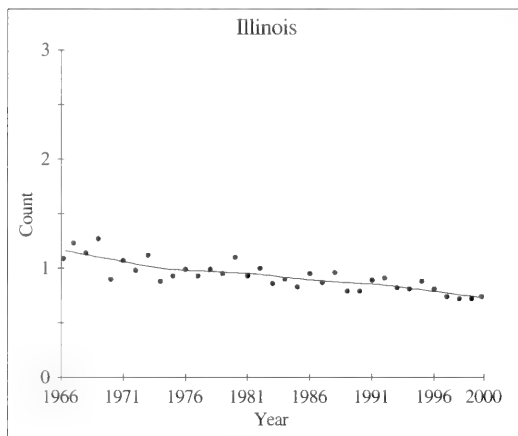
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**White-eyed Vireo**



Robert Randall

**Code: BEVI**

**Rangewide Distribution:** central and southwestern U.S., south to Honduras.

**ILLINOIS**

**Abundance:** uncommon migrant and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** dense riparian thickets and hedgerows, willow thickets.

**Nest:** a deep cup of dried leaves, shredded bark, plant fibers, and spider cocoons lined with finer materials, suspended by a rim between two twigs.

**Eggs:** 4, white, with scattered brown spots (especially near the larger end).

**Incubation:** 14 days.

**Fledging:** from 11–12 days.

the transitory nature of successional habitat and the subsequent need for these birds to move to new nesting sites every few years, long-term population studies are difficult to conduct. Populations have seriously declined in the central part of its range in recent decades (Brown 1993). Preservation of habitat along rivers and streams is important for this species.

**Illinois History**

Early accounts describe Bell's Vireo as "confined to the prairie districts, and is almost everywhere a much less common bird than [the White-eyed Vireo]" (Ridgway 1889). A couple of decades later, it was "a not uncommon summer resident of Illinois" (Cory 1909). During the first half of the twentieth century, it was an uncommon summer resident in the Chicago region (Ford 1956). From 1909 to 1957 the statewide population level was fairly stable (Graber et al. 1985).

**Breeding Bird Survey Trends**

The trend estimates for the Illinois and the upper Midwest Bell's Vireo populations are  $-1.3\%$  per year (nonsignificant,  $P = 0.66$ ) and  $-4.9\%$  per year (nonsignificant,  $P = 0.21$ ), respectively, for 1966–2000.

*Credibility Index:*  $IL = 2$  and  $UM = 2$ .

**Distribution**

Illinois is at the northeastern limit of the breeding range of the Bell's Vireo. During the atlas project, this fairly uncommon species was thinly scattered through the state. Graber et al. (1985) expected the species to nest in all Illinois counties except the extreme south, where the White-eyed Vireo was dominant. However, the Bell's Vireo has now become a regular breeder in the southern counties as well. The population fluctuates, in part as a response to the maturation of successional habitat.

**Frequency**

The Bell's Vireo was reported from 159 (15.9%) priority blocks and 22 nonpriority blocks. It was Confirmed as breeding in 31 (3.1%) of the priority blocks. Unfamiliarity with its song and late-season visits to atlas blocks may have resulted in fewer reports. This species was Confirmed in 20% of the 159 priority blocks in which it was reported, which is a relatively low rate of confirmation. The Bell's Vireo, like most other territorial species, probably bred in most of the blocks in which it was reported.

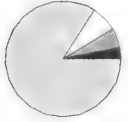
The Bell's Vireo is a nondescript and reserved insectivorous bird best identified by its unique bubbly song. It breeds primarily in the central and southwestern U.S. and northern Mexico. This vireo occupies a variety of dense shrubby areas, including early successional habitats, riparian areas, roadsides, fencerows, and old fields. Although it has similar habitat requirements, the Bell's Vireo prefers more open habitat than the White-eyed Vireo (Graber et al. 1985). Bell's Vireo nests, which are commonly parasitized by Brown-headed Cowbirds, are placed a few feet from the ground, well-hidden in dense shrubby foliage. Abundance appears to be a function of availability of suitable nesting habitat and the level of cowbird parasitism (Brown 1993). Because of

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	31	3.1	19.5	39	3.0
Probable	55	5.5	34.6	64	5.0
Possible	73	7.3	45.9	78	6.1
Totals	159	15.9	100.0	181	14.1

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

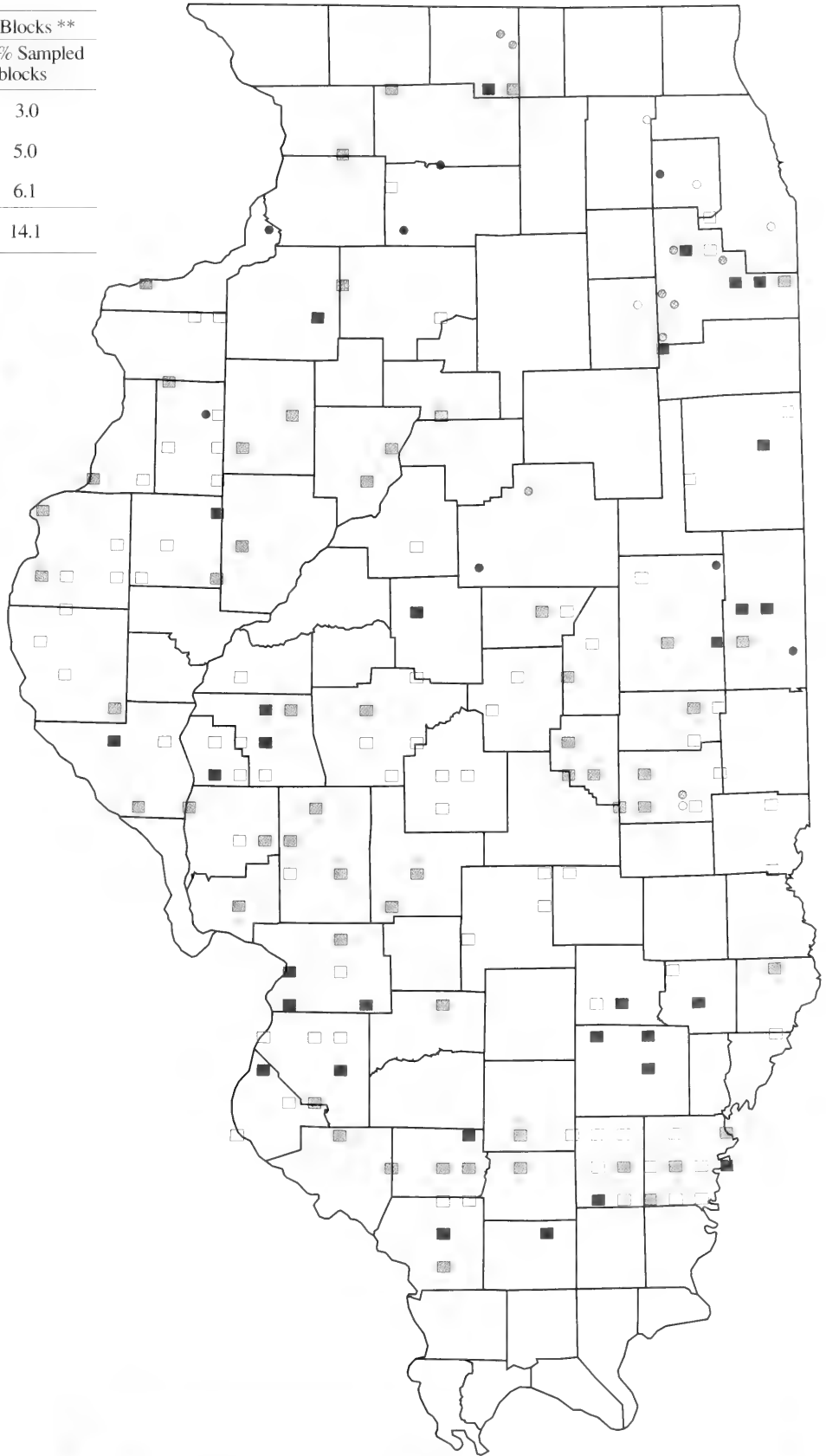


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Bell's Vireo**





Richard Day / Daybreak Imagery

**Code: YTVI**

**Rangewide Distribution:** eastern half of the U.S. and adjacent southern Canada, south through northwestern South America.

**ILLINOIS**

**Abundance:** fairly common migrant and summer resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open deciduous forest, forest edge, and riparian habitat.

**Nest:** a deep cup of grass, forbs, shredded bark, and plant fibers decorated with lichens and lined with finer materials, suspended in tree by rim from prongs of forked twig.

**Eggs:** 4, white to pinkish white, spotted with browns (near the larger end).

**Incubation:** 14 days.

**Fledging:** about 14 days.

fairly open understories but tends to breed in more fragmented forests (Rodewald and James 1996). While it nests on the forest edge, the Yellow-throated Vireo requires large blocks of forest for successful breeding (Rodewald and James 1996). Nests are typically built 25–50 feet above the ground. This species is a common host of Brown-headed Cowbirds. Rangewide, the population of this vireo has increased in recent decades, according to Breeding Bird Survey data.

**Illinois History**

At the beginning of the twentieth century, the Yellow-throated Vireo, according to Cory (1909), was a “not uncommon summer resident” in Illinois. Ford (1956) listed it as a fairly common summer resident in the Chicago region. Graber et al. (1985) found no evidence that the population had changed much within historical times. The Yellow-throated Vireo currently occurs in low numbers (Bohlen 1989).

**Breeding Bird Survey Trends**

From 1966 to 2000 the trend estimates for the Yellow-throated Vireo are 2.2% per year (nonsignificant,  $P = 0.15$ ) for Illinois and 1.7% per year (significant,  $P = 0.02$ ) for the upper Midwest.

*Credibility Index:*  $IL = 2$  and  $UM = 2$ .

**Distribution**

The Yellow-throated Vireo was found statewide and reported in priority blocks in 92 counties. Its distribution is spotty, perhaps because habitat availability is a limiting factor.

**Frequency**

The Yellow-throated Vireo was reported from 301 (30.2%) priority blocks and 53 nonpriority blocks. Breeding was Confirmed in 39 (3.9%) of the priority blocks, with adults feeding young (16 FY records) being the most frequently used breeding evidence criterion in those blocks. The treetop nests of this species are hard to find. It was Confirmed in 13% of the 301 priority blocks in which it was recorded, which is among the lowest rates of confirmation for species reported in more than 10 priority blocks. The Yellow-throated Vireo probably bred in most of the blocks in which it was recorded and may have been underreported as a result of difficulties with visual observation and song recognition.

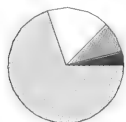
The most brightly colored and perhaps the loudest of all the vireo species, the Yellow-throated Vireo breeds fairly commonly throughout the eastern U.S. from the Great Plains to the East Coast. Its “three-aye” song phrase is the best means of detecting its presence since it is more likely to be heard than seen. This vireo inhabits a variety of mature upland and bottomland forest edge habitats. Like the Red-eyed Vireo, the Yellow-throated Vireo forages for insects in the upper levels of well-canopied deciduous forests that have

## Breeding Evidence

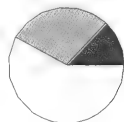
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	39	3.9	13.0	48	3.7
Probable	87	8.7	28.9	107	8.3
Possible	175	17.5	58.1	199	15.5
Totals	301	30.2	100.0	354	27.5

\* 998 priority blocks

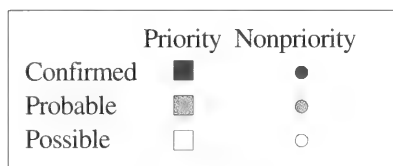
\*\* 1,286 total blocks (priority and nonpriority)



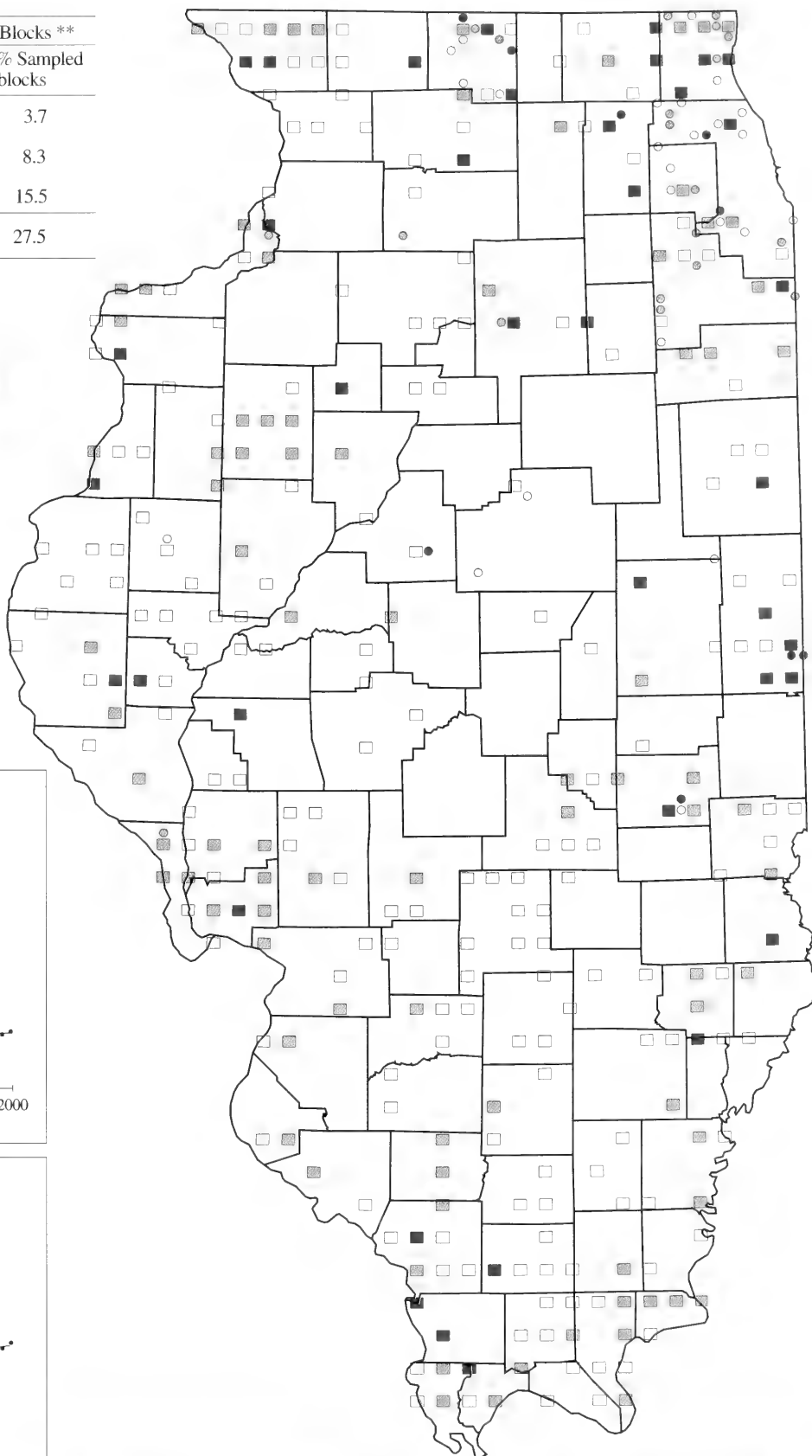
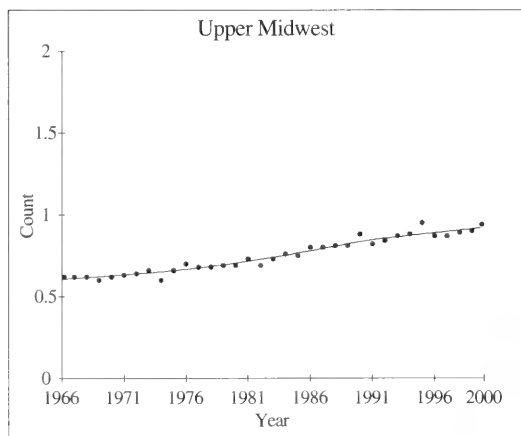
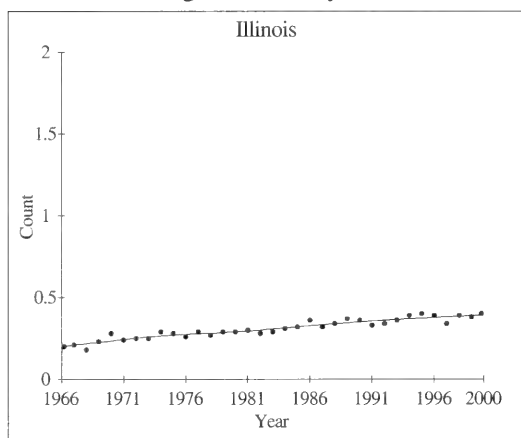
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Yellow-throated Vireo**



Betty Darling Cottrille/Cornell Lab of Ornithology

**Code:** WAVI

**Rangewide Distribution:** western and south-central Canada, south to Honduras.

**ILLINOIS**

**Abundance:** common migrant and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open deciduous woodlands, riparian forests, thickets, and parks.

**Nest:** compact, basketlike cup of bark strips, leaves, and grass lined with finer materials, suspended by rim from prongs of forked twig.

**Eggs:** 4, white, spotted with browns or black.

**Incubation:** 12 days.

**Fledging:** about 16 days.

The Warbling Vireo is a common breeder in much of the U.S. outside of the southern states, and in central and western Canada. A plain, gray-colored vireo with a distinctive warbling song, the Warbling Vireo can be heard at any time of day throughout the breeding season. The male even sings from the nest. The Warbling Vireo is a species of relatively open woods and woodland edges usually along rivers, streams, and ponds in association with cottonwoods,

silver maples, and willows (Graber et al. 1985). It inhabits the canopy of tall trees where it forages for insects. Nests are generally found in the periphery of tall trees 5–60 feet above ground. Forest fragmentation, which tends to have a negative impact on many forest-dwelling species, may benefit this species by providing additional edge habitat (Hall 1983). Brown-headed Cowbirds frequently parasitize nests.

**Illinois History**

In the late 1800s and early 1900s the Warbling Vireo was “abundant in all cultivated portions of the country” (Ridgway 1889) and “a common summer resident in suitable localities” (Cory 1909). It remained a common summer resident throughout the 1900s (Smith and Parmalee 1955; Bohlen 1989).

**Breeding Bird Survey Trends**

The Warbling Vireo population experienced an increase of 2.5% per year (significant,  $P = 0.01$ ) in Illinois from 1966 to 2000. The trend estimate for the same period for the upper Midwest is  $-0.1\%$  per year (nonsignificant,  $P = 0.82$ ).

*Credibility Index:* IL = 1 and UM = 2.

**Distribution**

The Warbling Vireo was found throughout Illinois during the atlas project, but with gaps in distribution in the highly agricultural areas, which may have lacked suitable habitat. Evidence of breeding was reported in priority blocks in every county during the atlas project and these vireos may actually nest in every county. Graber et al. (1985) suggested that they may even nest in every township in the state.

**Frequency**

The Warbling Vireo was reported from 678 (67.9%) priority blocks and 124 nonpriority blocks. Breeding was Confirmed in 157 (15.7%) of the priority blocks, and the most frequently used evidence criteria for these records were adults feeding young (49 FY records), fledged young (42 FL records), and occupied nest (28 ON records). The Warbling Vireo probably bred in most of the blocks in which it was reported.

## Breeding Evidence

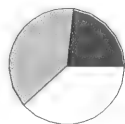
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	157	15.7	23.2	201	15.6
Probable	261	26.2	38.5	316	24.6
Possible	260	26.1	38.3	285	22.2
Totals	678	67.9	100.0	802	62.4

\* 998 priority blocks

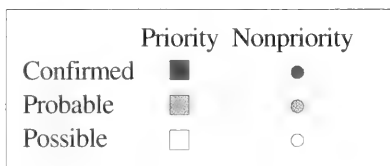
\*\* 1,286 total blocks (priority and nonpriority)



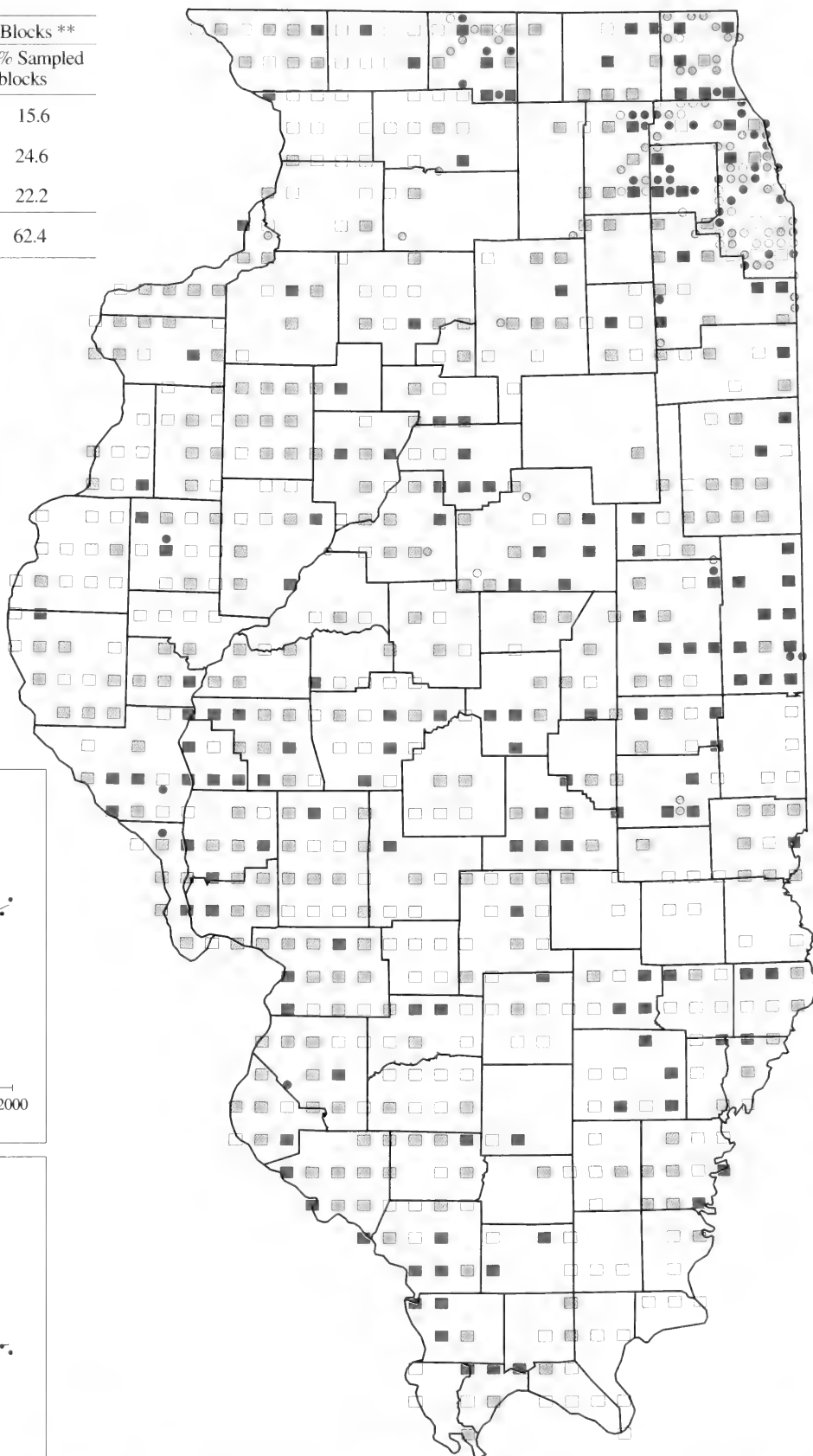
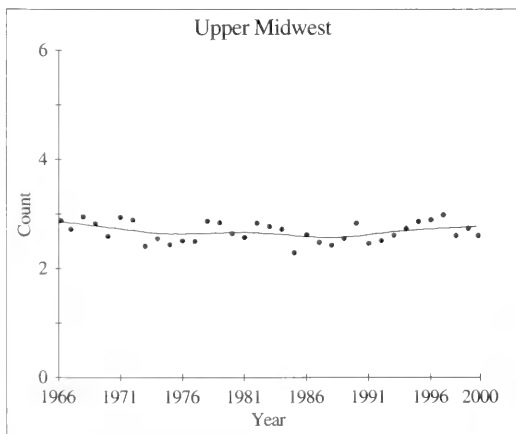
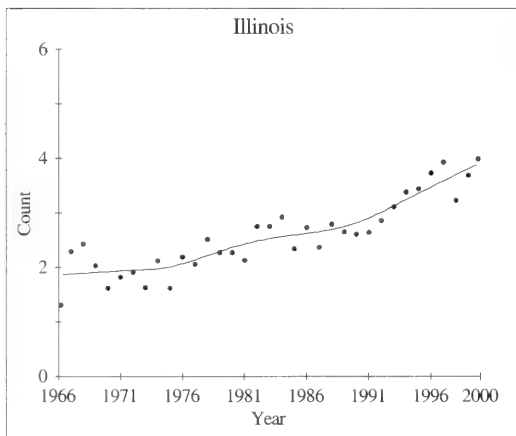
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Warbling Vireo**



Todd Fink / Daybreak Imagery

**Code: REVI**

**Rangewide Distribution:** western and southern Canada, northwestern and eastern U.S., south to northern South America.

**ILLINOIS**

**Abundance:** common migrant and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous forest and woods.

**Nest:** a dainty, basketlike cup of grapevine bark, fine grass, rootlets, and spider webs lined with finer materials, suspended by rim from forked twig.

**Eggs:** 4, white, spotted with browns or black (especially on larger end).

**Incubation:** 11–14 days.

**Fledging:** from 12 to 14 days.

This species is one of the most abundant birds in the forests of North America, with a breeding range that includes the eastern half of the U.S., the northwestern U.S., and most of Canada. The Red-eyed Vireo is a drab-colored, incessantly singing bird that is more often heard than seen. It inhabits the forest interior and prefers extensive stands of mature upland or bottomland deciduous forests with closed canopies but is also known to breed in smaller woodlands. Within the forest interior it occupies the mid-to-upperstory levels. Red-eyed Vireos suspend their nests in the understory or midstory (2 to 55 feet above ground) from horizontal forked branches (Graber et al. 1985). During the breeding season, Red-eyed Vireos eat mostly insects, which they glean from foliage and branches in the forest canopy. This species is frequently

victimized by Brown-headed Cowbirds (Robinson 1994). In recent decades the populations in the U.S. and Canada have increased, according to Breeding Bird Survey data.

**Illinois History**

During the 1800s, the Red-eyed Vireo was referred to as “perhaps the most abundant woodland species” not only in Illinois but in its entire range (Ridgway 1889). It remained common through the first half of the twentieth century (Ford 1956; Smith and Parmalee 1955) and its population remained fairly stable for the next few decades (Graber et al. 1985). Red-eyed Vireos are probably now less common in Illinois due to fragmentation of forests and woodlands and perhaps cowbird parasitism.

**Breeding Bird Survey Trends**

The trend estimate for the Red-Eyed Vireo population in Illinois is  $-0.1\%$  per year (nonsignificant,  $P = 0.93$ ) for 1966–2000. The upper Midwest population increased at an annual rate of  $1.8\%$  (significant,  $P < 0.01$ ) from 1966 to 2000 and trend estimates are also positive and statistically significant for the two subintervals ( $2.3\%$  per year for 1966–1979 and  $2.4\%$  per year for 1980–2000).

*Credibility Index: IL = 2 and UM = 1.*

**Distribution**

During the atlas project, Red-eyed Vireos were reported throughout Illinois; they were found in priority blocks in 98 counties. They probably occur wherever there are large tracts of mature deciduous forests. Graber et al. (1985) stated that the species “surely nests in every county and probably in nearly every township.” Although the Breeding Bird Survey data do not indicate a substantial decline in population, the atlas data indicate a less ubiquitous distribution than the Graber statement suggests.

**Frequency**

The Red-eyed Vireo was reported from 496 (49.7%) priority blocks and 133 nonpriority blocks. Breeding was Confirmed in 75 (7.5%) of the priority blocks. It was Confirmed in 15% of the 496 priority blocks in which it was reported, which is a relatively low rate of confirmation considering the fairly large number of records in priority blocks. The most frequently used breeding evidence criteria for Confirmed records in priority blocks were adults feeding young and fledged young (37 FY and 12 FL records, respectively). Red-eyed Vireos were easy to detect because of their persistent singing, so they were likely either scarce or absent from blocks where they were not reported.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	75	7.5	15.1	116	9.0
Probable	169	16.9	34.1	231	18.0
Possible	252	25.3	50.8	282	21.9
Totals	496	49.7	100.0	629	48.9

\* 998 priority blocks

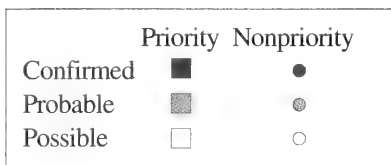
\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

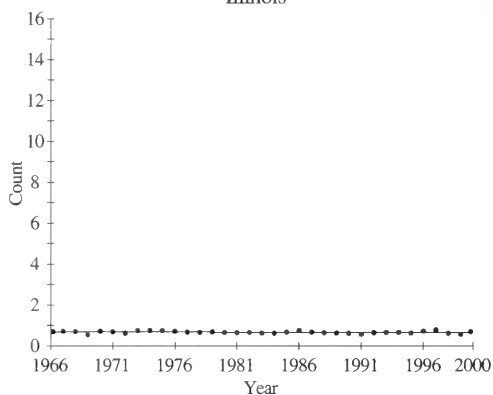


% of priority blocks with records for this species

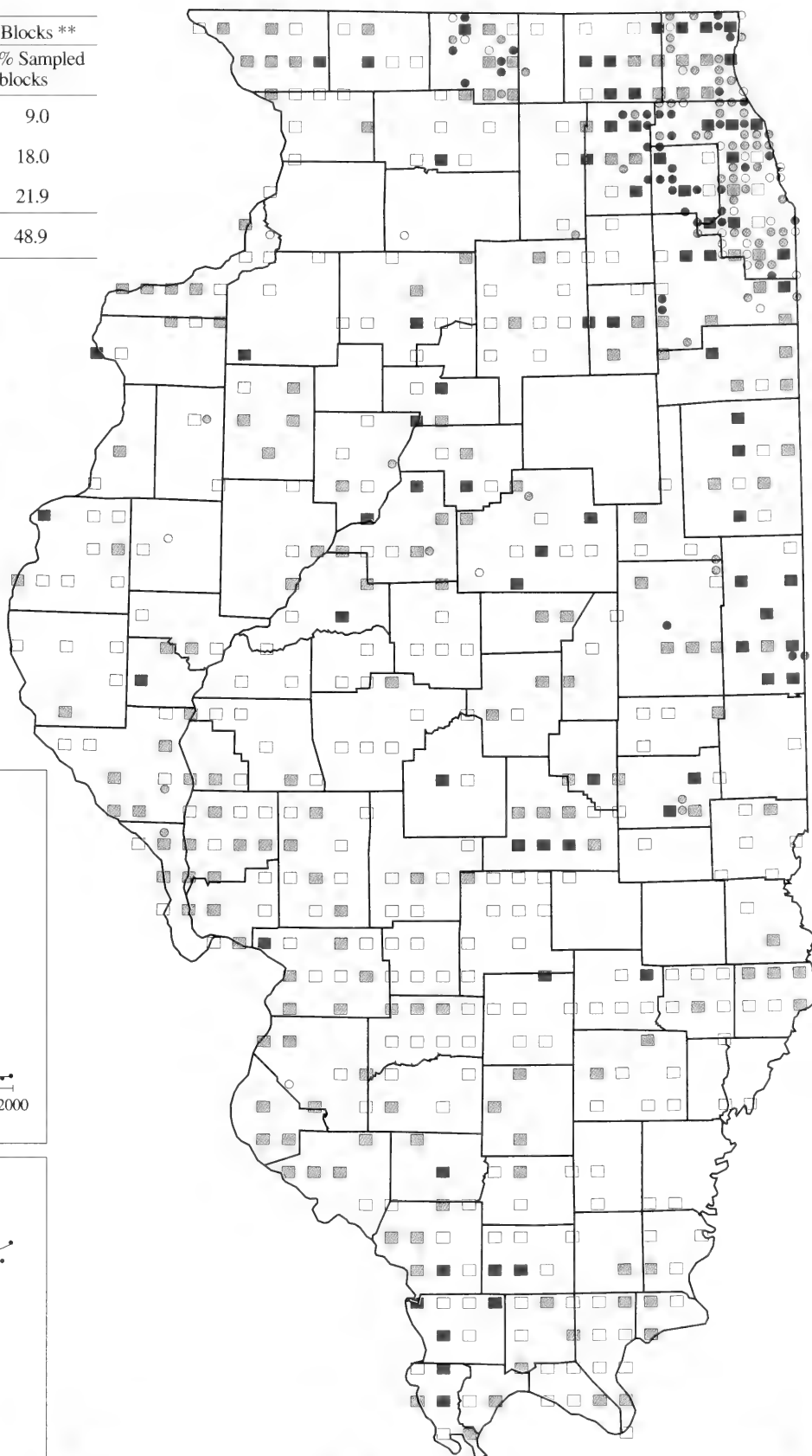
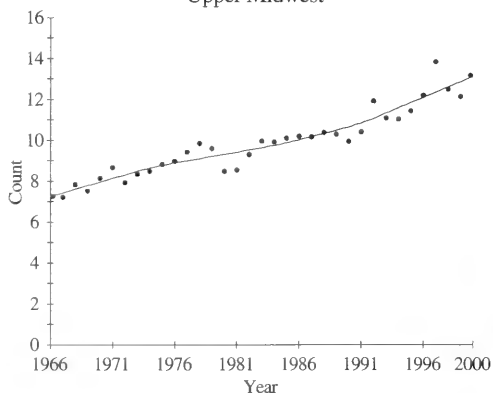


## Breeding Bird Survey Trends

Illinois



Upper Midwest



**Red-eyed Vireo**



## Blue Jay

## *Cyanocitta cristata*



Richard Day / Daybreak Imagery

### Code: BLJA

**Range-wide Distribution:** U.S. east of the Rockies and southern Canada.

### ILLINOIS

**Abundance:** common permanent resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous and mixed forests, open woodlands, parks, and residential areas.

**Nest:** a bulky, compact cup of twigs, bark strips, moss, and miscellaneous items lined with fine rootlets, in upright crotch of a tree.

**Eggs:** 4–5, variable—greenish, buff, or bluish, spotted with browns.

**Incubation:** 16–18 days.

**Fledging:** from 17 to 21 days.

The Blue Jay is common and widespread in woodlands and residential areas in its range, which is primarily the U.S. and southern Canada from the Rockies east to the Atlantic coast. Its raucous calls can be heard year-round, although it can be somewhat reclusive during the breeding season. Blue Jays primarily inhabit wooded areas of various ages and sizes, including small woodlots, mature forests, residential areas, parks, cemeteries, and forest edges. They are often associated with mast-producing trees, such as oak and beech (Smith 1986). Nests are usually placed 3–80 feet above ground in a substantial upright fork of a large tree. Their

omnivorous diet includes insects, corn, fruit, carrion, acorns, and eggs and nestlings of other birds. Beginning in the mid-1900s the Blue Jay's range expanded westward, perhaps in response to establishment of residential areas and shelterbelts. Because of its ability to adapt to landscape changes, the Blue Jay has remained one of the most common nesting species in North America.

### Illinois History

The Blue Jay has been a common species throughout the state since at least the late 1800s (Ridgway 1889; Cory 1909; Smith and Parmalee 1955; Ford 1956; Graber et al. 1987; Bohlen 1989). However, the summer population in 1957 was about a third the size of that in 1909, and the decline was especially great in the south (Graber and Graber 1963). During this period, a population shift from forest to residential areas was noted (Graber and Graber 1963).

### Breeding Bird Survey Trends

The Blue Jay population in Illinois has experienced an annual decline of  $-1.0\%$  (significant,  $P = 0.04$ ) from 1966 to 2000. On the regional scale the upper Midwest trend estimate is also negative at  $-0.4\%$  per year for the period 1966–2000 (nonsignificant,  $P = 0.09$ ). The causes of variation in annual abundance and the apparent decline in population are puzzling because this species is well-adapted to man-made changes to the environment.

**Credibility Index:**  $IL = 1$  and  $UM = 1$ .

### Distribution

Familiar and conspicuous, Blue Jays were well represented by atlas data and occurred throughout the state. They were reported in priority blocks in every county and were one of the most frequently reported and widely distributed species in priority blocks during the atlas project (Table 4).

### Frequency

The Blue Jay was reported from 957 (95.9%) priority blocks and 178 nonpriority blocks. Breeding was Confirmed in 598 (59.9%) of the priority blocks. Confirmation was relatively easy to obtain. Eighty-two percent of the Confirmed records in priority blocks were fledged young (278 FL records) or adults feeding young (211 FY records). Although nests were difficult to find, there were 49 records of nests with eggs or young. It is likely that Blue Jays nested in all the blocks in which they were recorded.



## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	598	59.9	62.5	721	56.1
Probable	163	16.3	17.0	193	15.0
Possible	196	19.6	20.5	221	17.2
Totals	957	95.9	100.0	1,135	88.3

\* 998 priority blocks

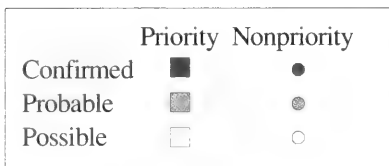
\*\* 1,286 total blocks (priority and nonpriority)



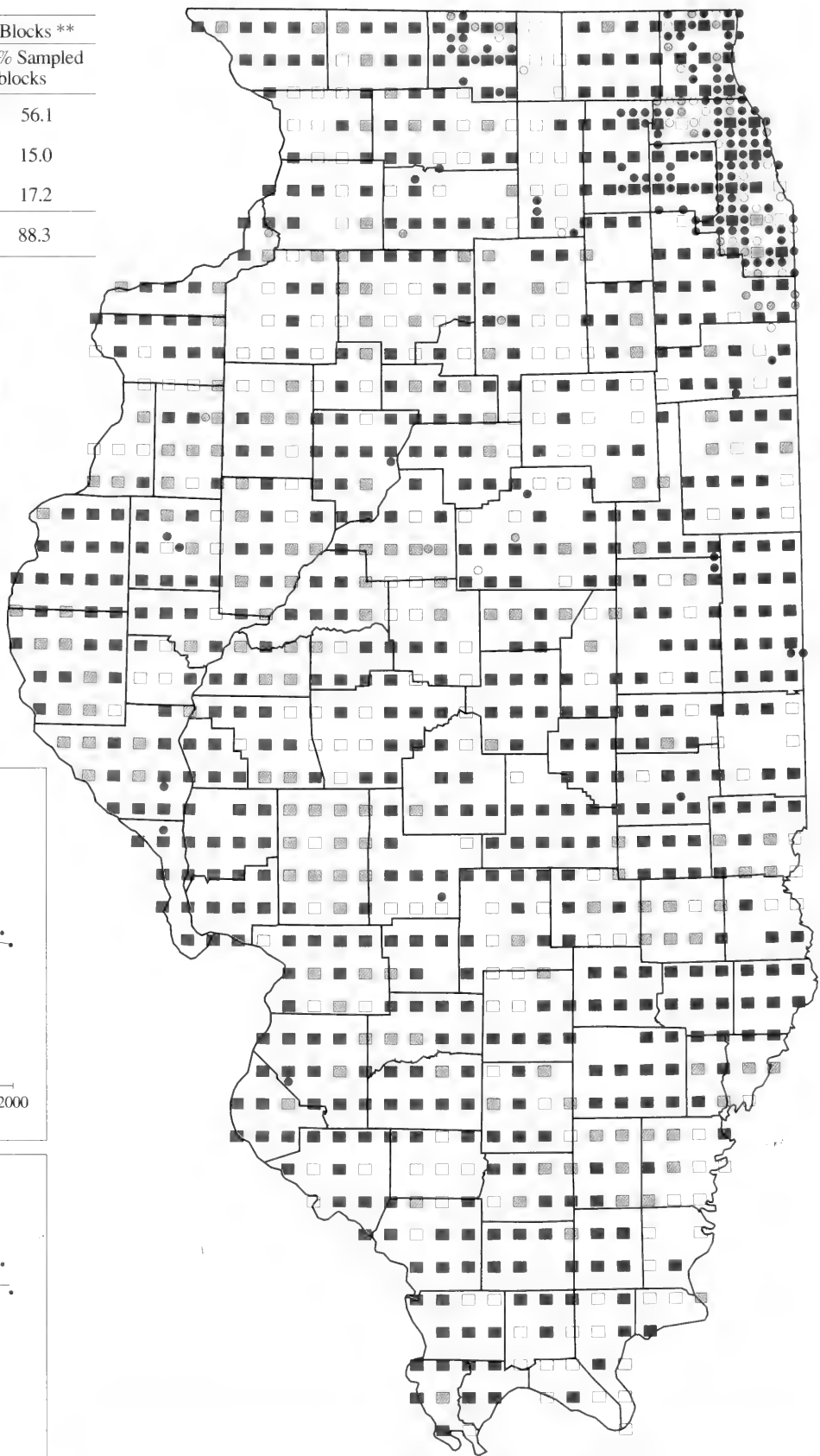
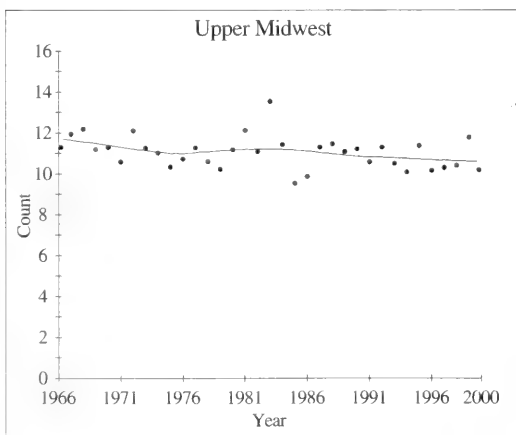
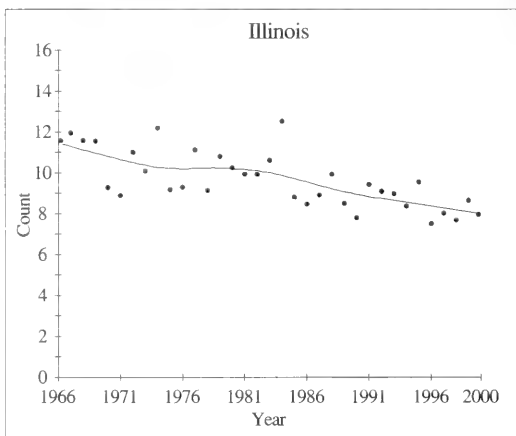
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



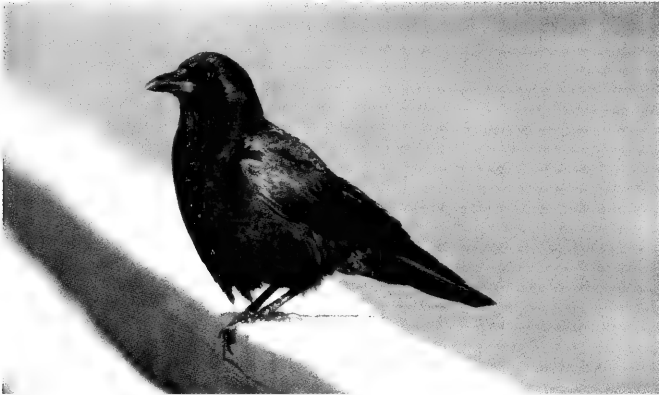
## Breeding Bird Survey Trends



**Blue Jay**

## American Crow

## *Corvus brachyrhynchos*



Dennis Oehmke

### Code: AMCR

**Rangewide Distribution:** southern half of Canada and most of the U.S. except the Southwest.

### ILLINOIS

**Abundance:** very common permanent resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open woodlands and forests, farmlands, orchards, and residential areas.

**Nest:** a cup of branches, twigs, and bark lined with grass, feathers, moss, and other fine materials, in a tree.

**Eggs:** 4–6, bluish to olive-green, marked with brown or gray blotches.

**Incubation:** 18 days.

**Fledging:** from 28 to 35 days.

The American Crow is one of the most widely distributed birds in North America, breeding in the southern half of Canada and most of the U.S. except the Southwest. This species is a familiar and highly visible bird. Its large size, raucous “caws”, rowing flight, and all-black appearance distinguish it from all other species in Illinois except the slightly smaller Fish Crow. Crows occur wherever large trees are available for nesting and roosting. Primarily a species of open and semi-open country, crows inhabit farmland, parks, and residential areas. Nests are placed in large trees in a

substantial fork near the trunk. American Crows are solitary nesters but sometimes breed cooperatively and may be assisted by young from previous years (Kilham 1984). They eat a wide variety of foods, including corn, seeds, fruit, insects, small mammals, amphibians, reptiles, garbage, and carrion. Crows are highly adaptable; they nest in developed as well as rural environments and have adapted their diets to include grain. They have remained very common despite human persecution (Verbeek and Caffrey 2002).

### Illinois History

The American Crow has always been a common to abundant species in Illinois (Cory 1909; Smith and Parmalee 1955; Bohlen 1989). A population decline occurred in Illinois in the first half of the 1900s, with the number of birds in 1957 about one-fourth that in 1909 (Graber and Graber 1963).

### Breeding Bird Survey Trends

The American Crow population grew in Illinois and the upper Midwest during the period from 1966 to 2000. The population increased at annual rates of 1.7% (significant,  $P = 0.03$ ) in the state and 1.3% (significant,  $P < 0.01$ ) in the upper Midwest.

*Credibility Index:* IL = 1 and UM = 1.

### Distribution

American Crows occur commonly statewide and “surely nest in every county and perhaps in every township” in Illinois (Graber et al. 1987). During the atlas project, they were found in priority blocks in every county and were one of the most frequently reported and widely distributed species in priority blocks during the atlas project (Table 4).

### Frequency

The American Crow was reported from 927 (92.9%) priority blocks and 181 nonpriority blocks. Breeding was Confirmed in 409 (41.0%) of the priority blocks, mostly by observations of fledged young and adults feeding young (237 FL and 100 FY records, respectively). Because the crow is an early nesting species with egg laying occurring in early March (Graber et al. 1987), most birds had completed their breeding cycle by the time atlasers surveyed their blocks. It is likely that crows bred in most of the priority blocks in which they were recorded.

## Breeding Evidence

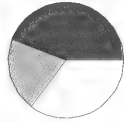
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	409	41.0	44.1	518	40.3
Probable	192	19.2	20.7	222	17.3
Possible	326	32.7	35.2	368	28.6
Totals	927	92.9	100.0	1,108	86.2

\* 998 priority blocks

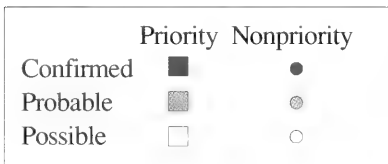
\*\* 1,286 total blocks (priority and nonpriority)



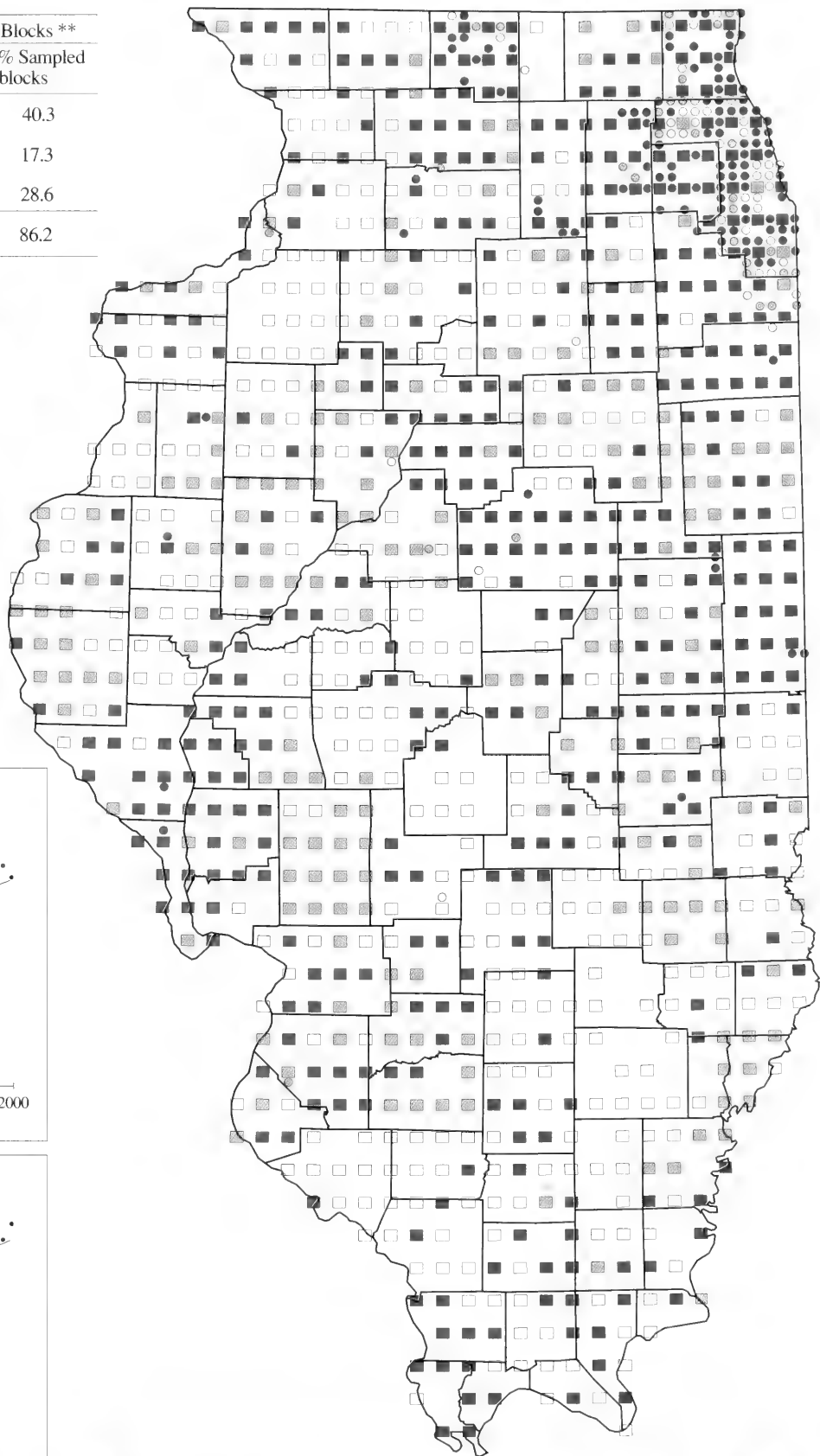
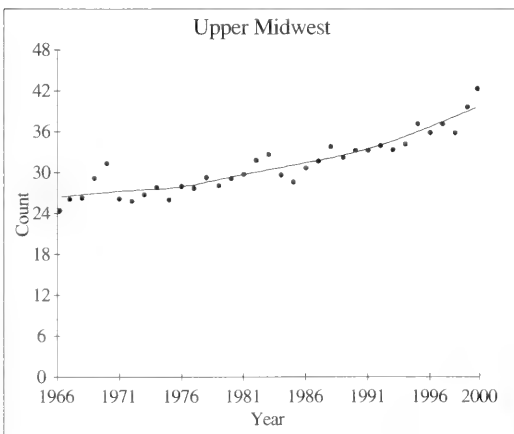
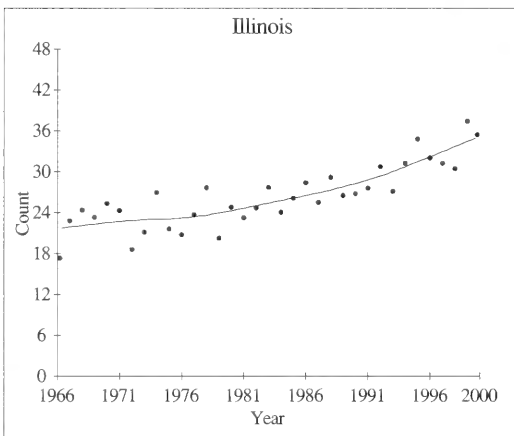
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**American Crow**



Joe Milosevich

**Code: FICR**

**Rangewide Distribution:** Atlantic and Gulf states from Massachusetts to Texas and inland U.S. along the major rivers of the East.

**ILLINOIS**

**Abundance:** uncommon migrant and summer resident along the Ohio River and southern portion of the Mississippi River.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** edges of floodplain woods along the major southern Illinois rivers.

**Nest:** a cup of twigs and sticks lined with bark, hair, grass, leaves, and other fine materials, in a tree.

**Eggs:** 4–5, bluish or grayish green, marked with brown or gray blotches.

**Incubation:** 16–18 days.

**Fledging:** 21 or more days.

Fish Crows are generally found in the southeastern and Atlantic coast states where they are common along the coast, but their range and numbers have been expanding inland along large rivers in the late twentieth century (McGowan 2001). Inland populations inhabit bottomland forests and rarely venture far from water. They often occur in small and occasionally in large flocks. The Fish Crow is best distinguished from the slightly larger American Crow by its nasal “carr” or “eh-eh” call notes. It is omnivorous, consuming crustaceans, fish, insects, eggs, carrion, and nestling birds by foraging on the ground, at the edge of water, and in trees. Fish Crows usually nest high in trees.

**Illinois History**

The Fish Crow is apparently a newcomer to the state. Although there may be some archeological records, the Fish Crow, if it occurred in Illinois during the nineteenth and early twentieth centuries, was not recognized as such. The earliest account for the Fish Crow in Illinois was a sight record in 1962 (Bohlen 1989). Although nesting had been suspected for years because of observations of adults carrying food for young and recent fledglings, the first Fish Crow nest in Illinois was not confirmed until 1992 (Kleen and Schwegman 1992). The Fish Crow has since become a fairly common species in the floodplains of the rivers in southern Illinois.

**Breeding Bird Survey Trends**

This southern species has been found on only a few BBS routes in Illinois and the upper Midwest and the trend estimates have deficiencies due to small sample size, low relative abundance, and annual variability in abundance. The trend estimate for the Fish Crow for 1966–2000 is 10.1% per year (nonsignificant,  $P = 0.59$ ) for Illinois and 9.2% per year (nonsignificant,  $p = 0.33$ ) for the upper Midwest. In the southeastern states, where the species is more common, the trend estimate is 1.4% per year (significant,  $P = 0.04$ ).

*Credibility Index:* IL = 3 and UM = 3.

**Distribution**

Although Fish Crows occur along the Mississippi River as far north as southern Adams County, the most northerly record during the atlas project was in southern Madison County. Fish Crows also occur along the Ohio River as far north as Gallatin County, but were not reported beyond western Massac County during the atlas project. The current distribution of this species is closely associated with the floodplains of the Ohio, lower Mississippi, Cache, Big Muddy, and Kaskaskia rivers.

**Frequency**

The Fish Crow was reported from 13 (1.3%) priority blocks; it was not reported from any nonpriority block. It was Confirmed as breeding in 4 blocks; all were adults carrying food for young. Since most of the Fish Crow's nesting activities were completed by the time the blocks were surveyed and because of potential confusion with the American Crow, it is likely that the atlas data underrepresents the actual status and distribution of this species.

## Breeding Evidence

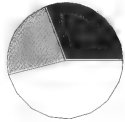
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	4	0.4	30.8	4	0.3
Probable	3	0.3	23.1	3	0.2
Possible	6	0.6	46.2	6	0.5
Totals	13	1.3	100.0	13	1.0

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



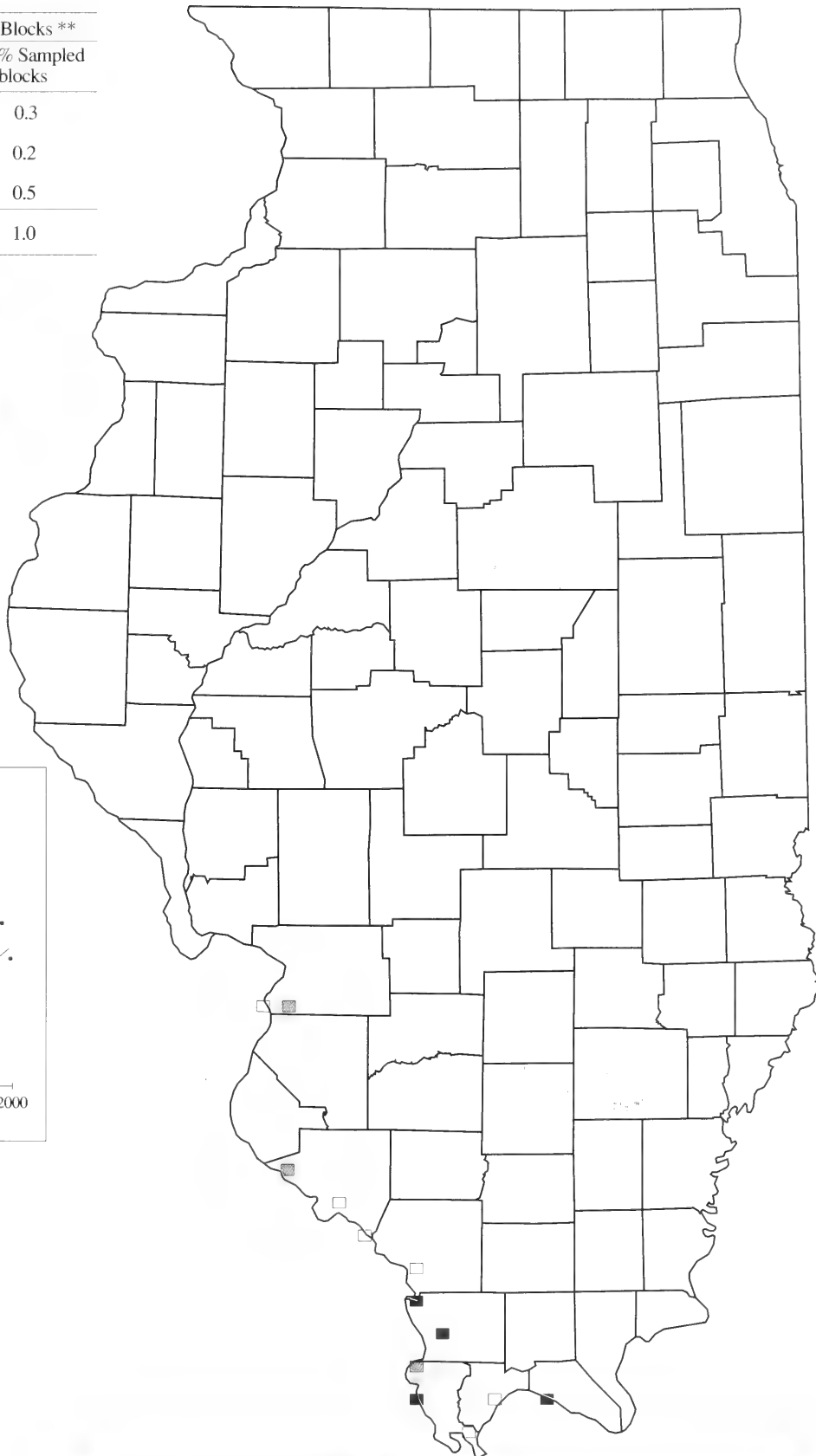
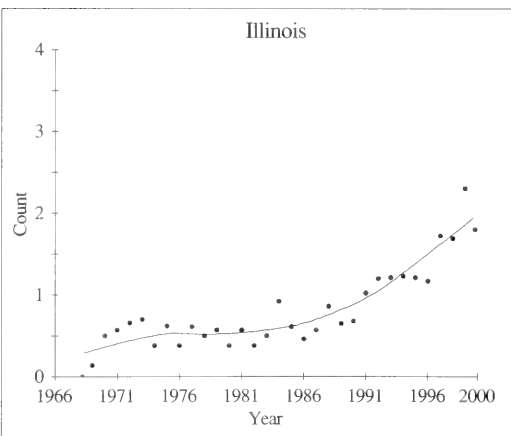
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○

## Breeding Bird Survey Trends



**Fish Crow**



Eric Walters

## Code: HOLA

**Rangewide Distribution:** Eurasia, northern Africa, throughout North America from northern Alaska and Canada to central Mexico.

## ILLINOIS

**Abundance:** common migrant, summer and winter resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open country, grasslands, agricultural areas with sparse vegetation, airports, and golf courses.

**Nest:** a shallow, cuplike depression in the ground lined with roots, grass, and hair.

**Eggs:** 3–4, variable, gray or greenish, heavily speckled with brown.

**Incubation:** 11–12 days.

**Fledging:** from 9 to 12 days.

The Horned Lark is a widespread and common bird of open country with sparse vegetation. Its breeding distribution is holarctic and includes much of North America from the Arctic to central Mexico. This cryptically colored species is a ground-feeding and ground-nesting bird that inhabits bare or short-grass habitats and is found in crop fields, pastures, along roadsides, and at airports. As natural grasslands disappeared, Horned Larks adapted to the agricultural landscape (Graber and Graber 1963; Beason 1995). The population expanded dramatically in the Midwest and East in

the late 1800s and early 1900s. The Horned Lark begins nesting early in the season. During the breeding season, the male's "tinkling" song and his impressive courtship flights, similar to those of other larks, are distinctive. Nests are placed in areas with little or no standing vegetation next to a dirt clod, a clump of grass, or in crop stubble. The Horned Lark's diet consists of seed, grains, and insects.

## Illinois History

The Horned Lark has been a common, year-round resident since the early accounts (Ridgway 1889; Cory 1909). Between 1909 and 1957 the statewide summer population increased more dramatically than for any other Illinois species, from 0.8 million to 5.6 million birds, as they expanded into agricultural habitats (Graber and Graber 1963). Although numbers fluctuate substantially from year to year, Horned Larks are currently considered to be common permanent residents.

## Breeding Bird Survey Trends

BBS data indicate that populations of the Horned Lark declined during 1966–2000 in Illinois and the upper Midwest. The trend estimate for Illinois is  $-1.0\%$  per year (significant,  $P = 0.01$ ). The long-term trend estimate for the upper Midwest is  $-1.2\%$  per year (significant,  $P < 0.01$ ). *Credibility Index: IL = 1 and UM = 1.*

## Distribution

The Horned Lark was a widely distributed species during the atlas project. It was reported from priority blocks in all 102 counties and was one of the species most frequently reported from priority blocks. It was less common in the populated northeastern and the heavily forested southern areas of the state.

## Frequency

The Horned Lark was reported from 870 (87.2%) priority blocks and 57 nonpriority blocks. Breeding was Confirmed in 532 (53.3%) of the priority blocks, mostly by observations of fledged young (405 FL records). There were only 10 records of nests with eggs or young. Because they may nest early in the season (as early as February in Illinois), many individuals may have completed their breeding cycle before atlasers began their field surveys. It is likely that Horned Larks bred in most blocks in which they were recorded.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	532	53.3	61.1	562	43.7
Probable	197	19.7	22.6	213	16.6
Possible	141	14.1	16.2	152	11.8
Totals	870	87.2	100.0	927	72.1

\* 998 priority blocks

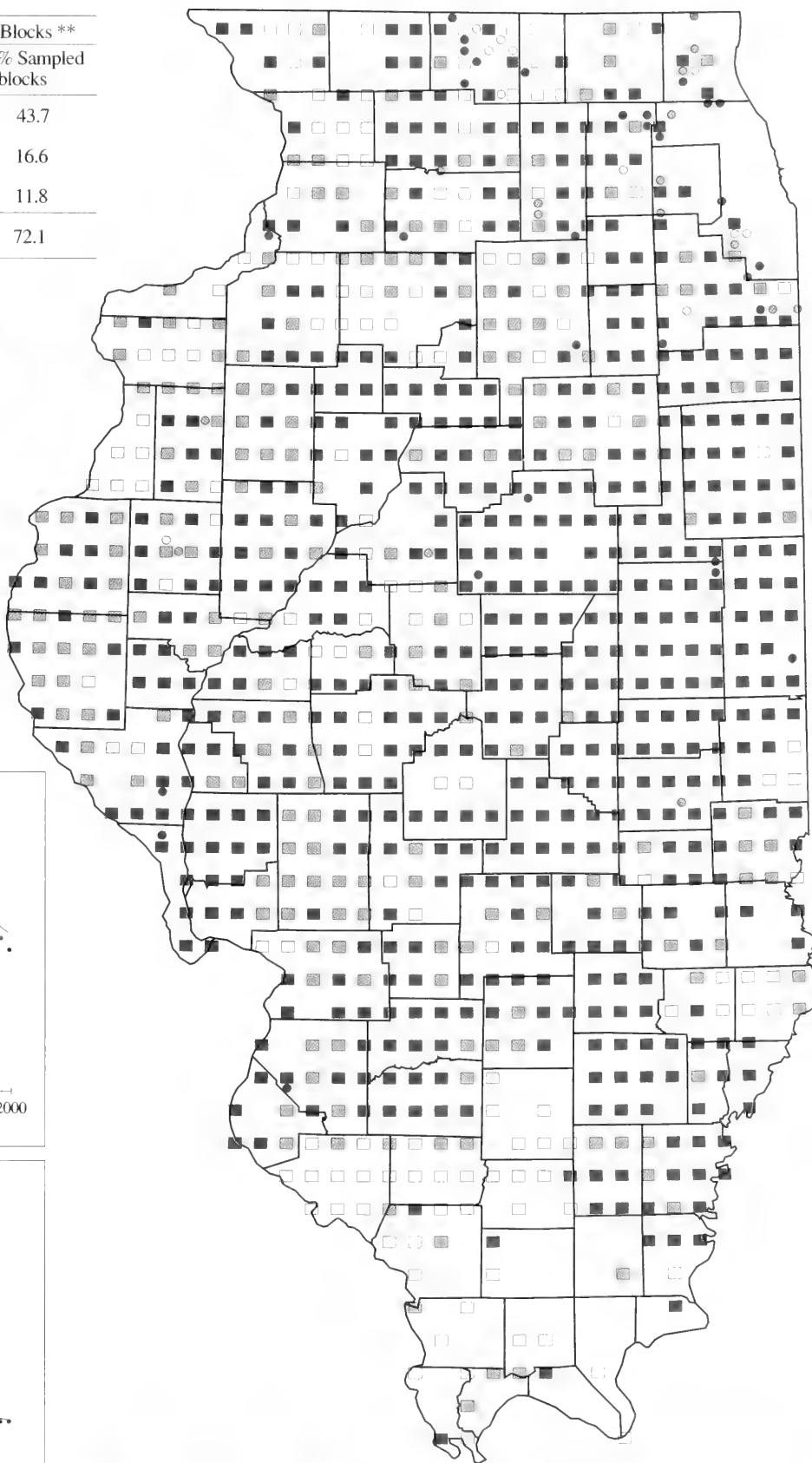
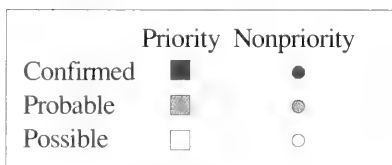
\*\* 1,286 total blocks (priority and nonpriority)



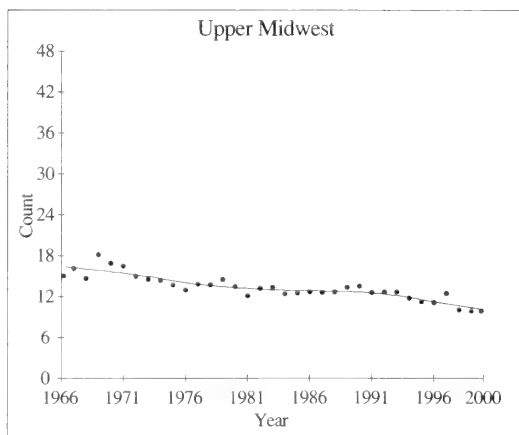
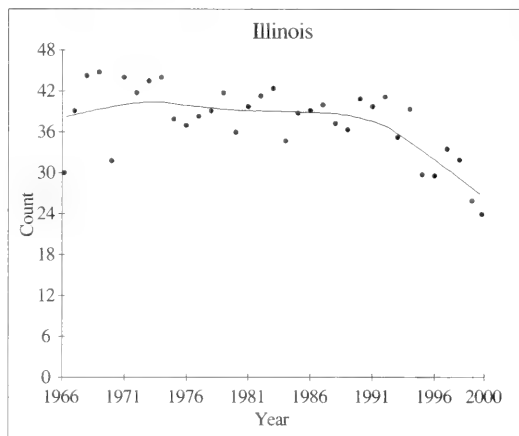
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Horned Lark**





Richard Day / Daybreak Imagery

## Code: PUMA

**Rangewide Distribution:** south-central Canada and most of the U.S. except the Rockies, south through central South America.

## ILLINOIS

**Abundance:** locally common migrant and summer resident, mainly where nesting boxes provided.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open and rural areas especially near open water.

**Nest:** a cavity in a tree lined with grasses, mud, and feathers; now primarily uses bird boxes and gourds.

**Eggs:** 4–5, white, unmarked.

**Incubation:** 15–18 days.

**Fledging:** from 26 to 31 days.

The Purple Martin, a conspicuous and well-known bird, is the largest swallow in North America. It generally breeds in southern Canada and in the U.S. from the Great Plains to the Atlantic coast, with scattered populations in the western U.S. and Mexico. It has a long and close association with mankind. Native Americans provided gourds for nesting and the settlers that followed continued the tradition of providing nesting habitat. In eastern North America Purple Martins now breed almost exclusively in birdhouses rather than in tree cavities excavated by woodpeckers in dead snags (Brown 1997). They are most common in open areas near

large bodies of water. Historically they inhabited forest edge and riparian areas in the East, but with their adaptation to birdhouses they are now found mostly around human settlements (Brown 1997). Purple Martins are among the earliest migrants to arrive in the spring as well as the earliest to depart in the fall. They usually nest in colonies that vary in size from a couple of pairs to several hundred. Purple Martins capture insects on the wing by sweeping and diving over open areas, especially near water. Populations are often affected by prolonged cold and wet weather, which reduces the availability of their insect prey, and by competition for nesting sites with House Sparrows and European Starlings.

## Illinois History

By the time the earliest observations were recorded in Illinois, the Purple Martin was a common summer resident (Cory 1909). Purple Martins had adapted to urbanized habitats long before 1900, and almost exclusively preferred residential habitats in the 1950s (Graber and Graber 1963).

## Breeding Bird Survey Trends

Trends for Illinois and the upper Midwest are similar. The trend estimates indicate a decline in the Purple Martin population in Illinois at  $-3.3\%$  per year (significant,  $P < 0.01$ ) and in the upper Midwest at  $-3.2\%$  per year (significant,  $P < 0.01$ ) for the period 1966–2000. The factors responsible for the decline are not known; however, a lack of suitable nesting sites is probably not one of them because there are many unoccupied, apparently suitable, martin houses.

*Credibility Index:* IL = 1 and UM = 2.

## Distribution

During the atlas project, Purple Martins were reported from all but three counties, but their distribution was patchy. Graber et al. (1972) suggested that Purple Martins probably nested in every Illinois township in the 1950s and 1960s.

## Frequency

The Purple Martin was reported from 565 (56.6%) priority blocks and 87 nonpriority blocks. Breeding was Confirmed in 386 (38.7%) of the priority blocks. Since the majority of Purple Martins now use artificial nest boxes, it was fairly easy to confirm their breeding. The breeding evidence for two-thirds of the Confirmed records in priority blocks was occupied nests (215 ON records).

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	386	38.7	68.3	441	34.3
Probable	35	3.5	6.2	43	3.3
Possible	144	14.4	25.5	168	13.1
Totals	565	56.6	100.0	652	50.7

\* 998 priority blocks

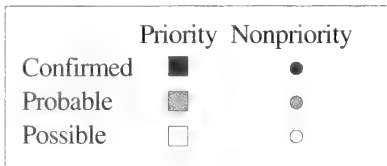
\*\* 1,286 total blocks (priority and nonpriority)



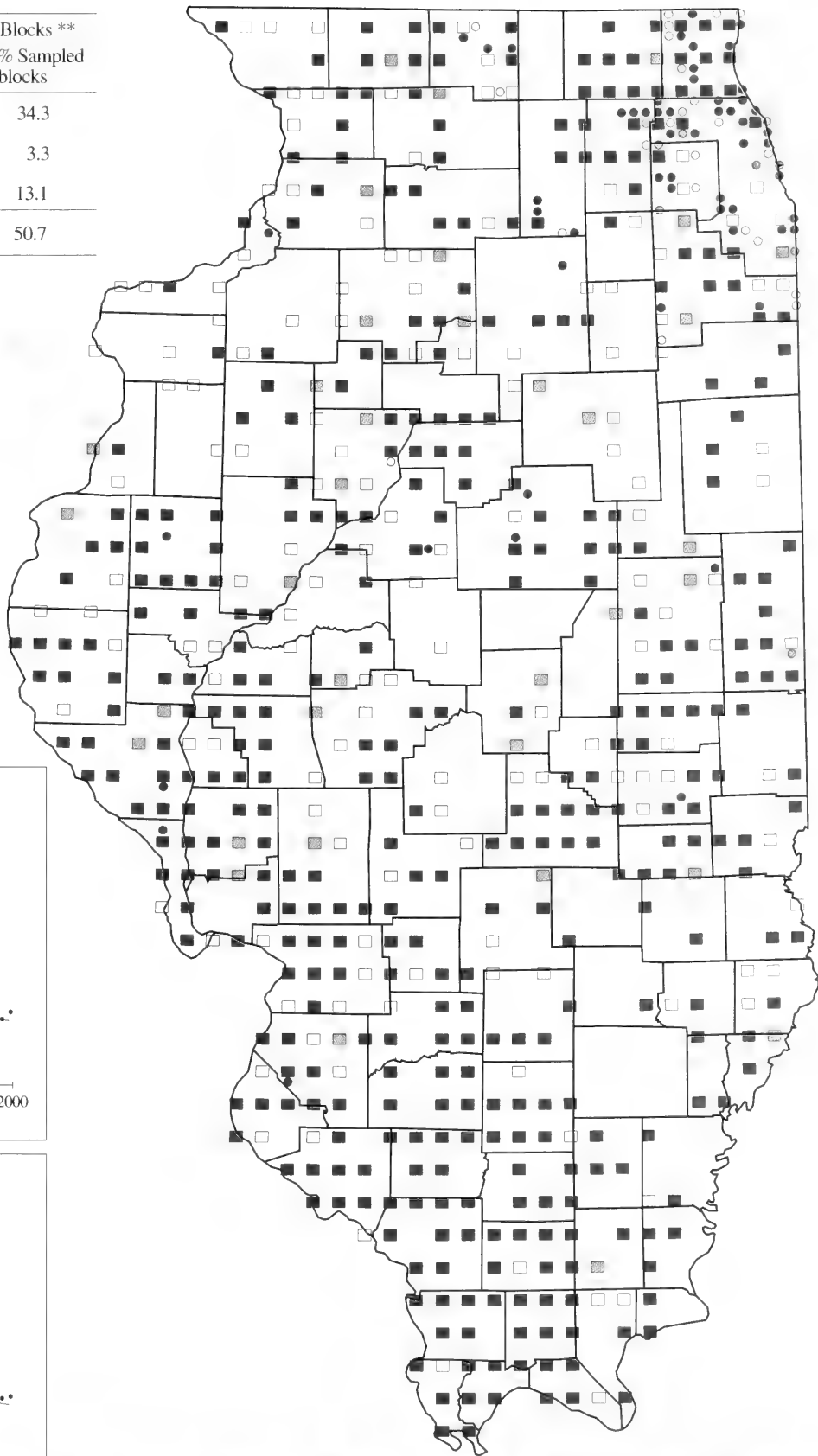
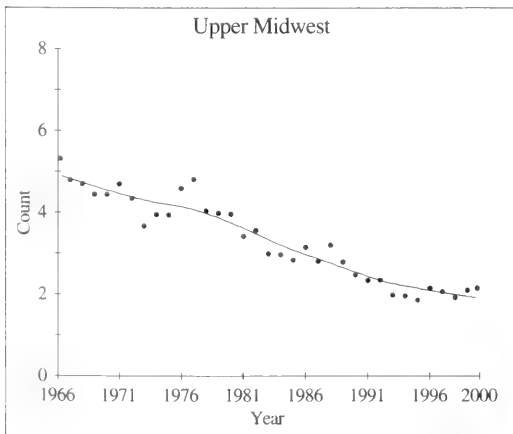
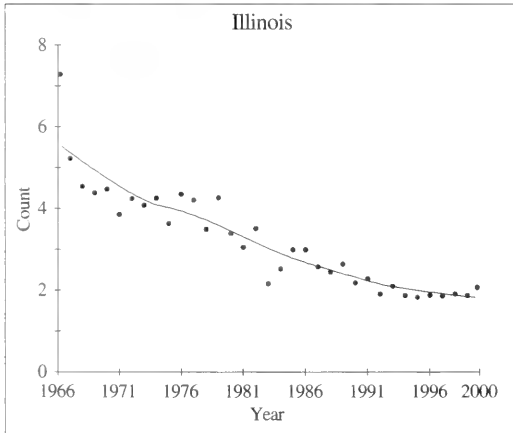
% of 998 sampled priority blocks (gray = no records for this species)



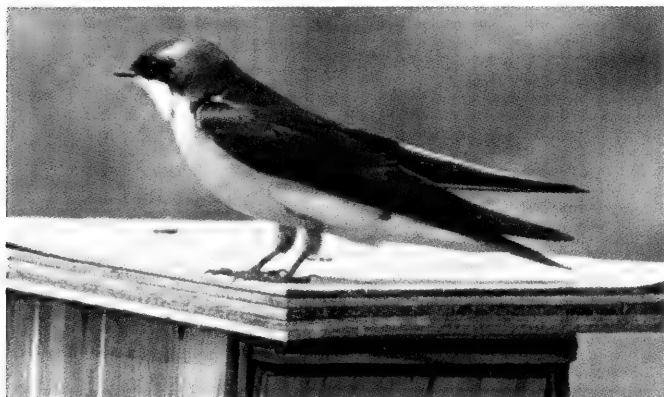
% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Purple Martin**



Joe Milosevich

**Code:** TRES

**Rangewide Distribution:** most of North America from Alaska and northern Canada, south to eastern Central America.

**ILLINOIS**

**Abundance:** common migrant and common summer resident, decreasing southward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open country, usually near water (often dead snags in water).

**Nest:** a cavity in a snag lined with grass, feathers, and other fine materials; often in nest boxes.

**Eggs:** 4–6, white, unmarked.

**Incubation:** 13–16 days.

**Fledging:** from 16 to 24 days.

The Tree Swallow, which is brilliant blue-green above and white below, breeds from northern Canada and Alaska through most of the U.S. except the southern tier of states. It is usually the first swallow to return each spring and the last to depart in fall. Because of its early arrival, this species is vulnerable to severe weather either directly or by elimination of the flying insects it feeds on. It is found near lakes, rivers, reservoirs, open fields, and marshes. Traditionally, Tree Swallows nest in single pairs or loose colonies in old woodpecker or naturally occurring cavities in trees in standing water, but also accept nest boxes intended for

bluebirds, Wood Ducks, and Purple Martins, sometimes some distance from water. Populations likely benefit from nest-box trails (Robertson et al. 1992). Tree Swallows compete with other secondary cavity-nesting species for natural and man-made nesting sites.

**Illinois History**

The Tree Swallow has been a common breeding species in Illinois since early accounts (Ridgway 1889; Cory 1909), with breeding occurring mostly in the northern half of the state. A population decline was reported along the Illinois River during the late 1800s (Barnes 1912) primarily due to competition for nesting sites with the expanding House Sparrow population. The Tree Swallow's range has expanded and this species is currently a well-established summer resident in the southern half of the state as a result of construction of large reservoirs, which has increased the availability of nesting sites (i.e., dead snags in water).

**Breeding Bird Survey Trends**

The trend estimates for Illinois and the upper Midwest for the Tree Swallow populations are 5.2% per year (nonsignificant,  $P = 0.32$ ) and 1.7% per year (significant,  $P < 0.01$ ), respectively, for 1966–2000.

*Credibility Index:*  $IL = 3$  and  $UM = 2$ .

**Distribution**

Once limited primarily to the northern half of Illinois, Tree Swallows now occur where nest boxes or tree cavities are available in or near ponds, lakes, marshes, and reservoirs. During the atlas project, they were more frequently reported in the priority blocks in the northeastern counties and along the large rivers.

**Frequency**

The Tree Swallow was reported from 313 (31.4%) priority blocks and 113 nonpriority blocks. Breeding was Confirmed in 153 (15.3%) of the priority blocks, mostly by observation of occupied nests (51 ON records), fledged young (47 FL records), adults feeding young (21 FY records), and nests with young (19 NY records). In many areas Tree Swallows nest in holes in dead snags over water, which is a difficult habitat to survey. The widespread use of nest boxes in the northern portion of its range may account for many of the Confirmed records in the northeastern counties.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	153	15.3	48.9	229	17.8
Probable	53	5.3	16.9	57	4.4
Possible	107	10.7	34.2	140	10.9
Totals	313	31.4	100.0	426	33.1

\* 998 priority blocks

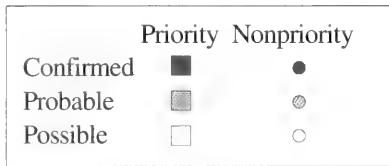
\*\* 1,286 total blocks (priority and nonpriority)



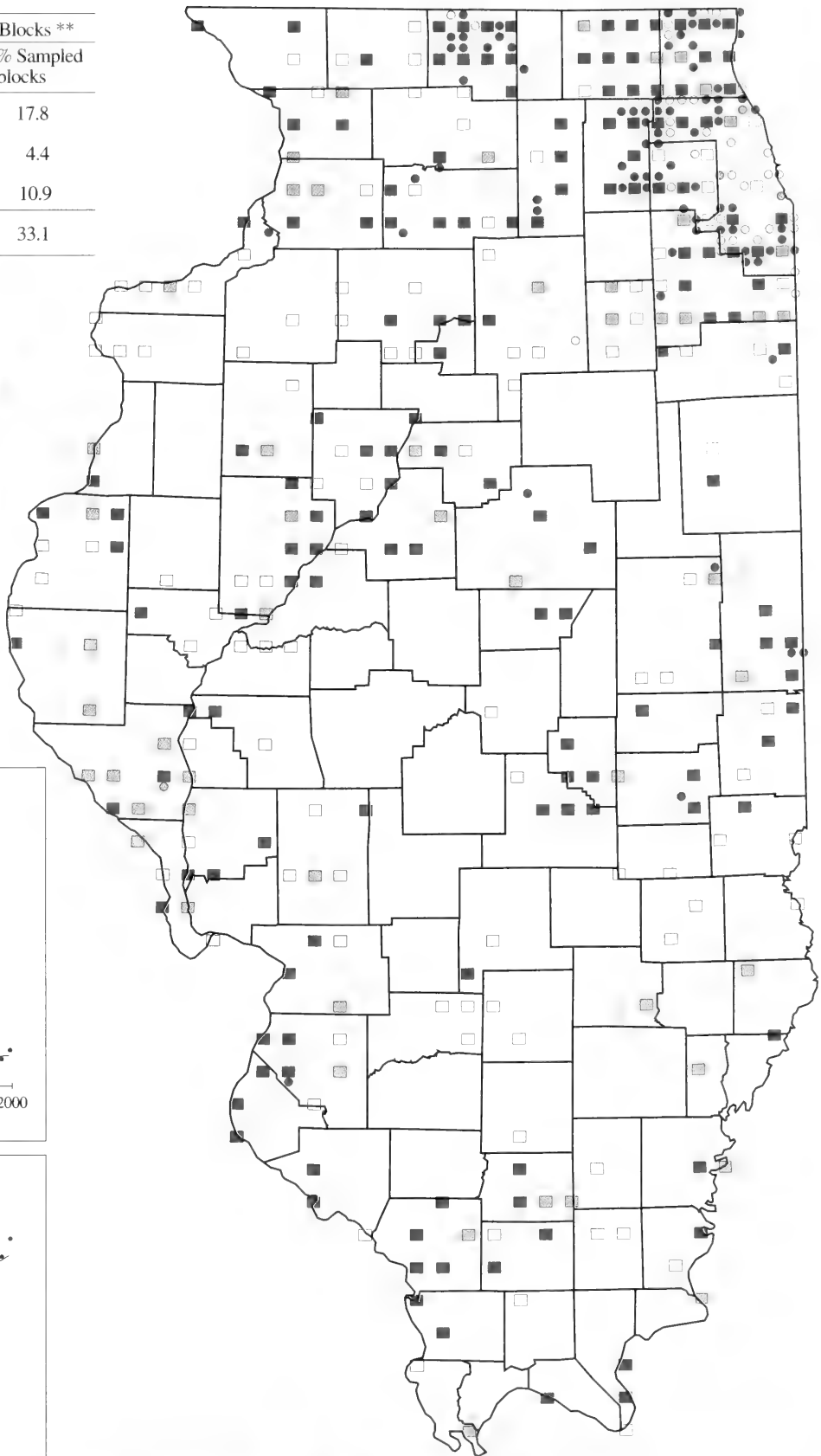
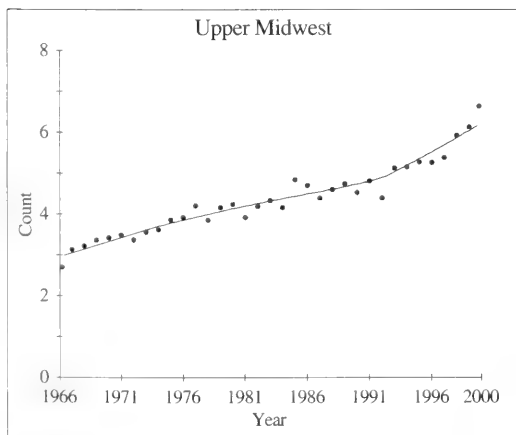
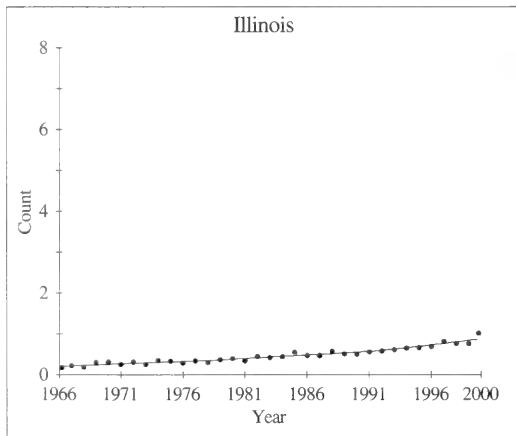
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Tree Swallow**



Walter Marcisz

**Code:** NRWS

**Rangewide Distribution:** extreme southern Canada, south through most of the U.S. to Panama.

**ILLINOIS**

**Abundance:** common migrant, fairly common summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** riverbanks and road cuts near running water.

**Nest:** a cavity in a bank, cliff, or culvert lined with grass, leaves, weed stems, and other fine materials, often in drain pipes or holes under bridges.

**Eggs:** 5–6, white, unmarked.

**Incubation:** 12 days.

**Fledging:** from 19 to 21 days.

The Northern Rough-winged Swallow, a brown-backed bird similar in appearance to the Bank Swallow, breeds from southern Canada to Central America, including nearly all of the U.S. Its common and scientific names refer to the unique feature on the outer web of the outer primary; this feather lacks terminal barbs and feels rough when stroked. The genus name means “scraper wing” and the species name means “saw feathers” (DeJong 1996). Rough-winged Swallows are loosely colonial, often with only one or two pairs but occasionally up to five or six pairs at a nesting site, at times nesting within a colony of Bank Swallows. Rough-winged Swallows inhabit a variety of streamside settings in rural, suburban, and forested areas where they fly back and

forth over open water catching insects. They nest in burrows in high vertical banks along rivers and streams but have recently adapted to using road-cuts, drainpipes, and holes in bridges as nesting sites.

**Illinois History**

The Northern Rough-winged Swallow has been a common to fairly common summer resident in Illinois throughout its recorded history (Cory 1909; Smith and Parmalee 1955; Bohlen 1989). Annual abundance varies, perhaps due to the movement of small colonies to areas supporting better nesting sites. The recent increase in the Illinois population indicated by Breeding Bird Survey data may be a result of additional nesting sites created through the direct and indirect activities of man, which include increased erosion in streams creating more vertical banks and increased availability of artificial burrows.

**Breeding Bird Survey Trends**

Populations of this species increased in Illinois and the upper Midwest from 1966 to 2000. Trend estimates for Illinois for the long-term and the two subinterval periods have been positive and significant, with an estimate of 4.5% per year for 1966–2000 ( $P < 0.01$ ), 15.3% per year from 1966 to 1979 ( $P = 0.01$ ), and 3.6% per year from 1980 to 2000 ( $P = 0.02$ ). The trend estimate for 1966–2000 for the upper Midwest is 1.2% per year (significant,  $P = 0.04$ ).

**Credibility Index:**  $IL = 2$  and  $UM = 1$ .

**Distribution**

During the atlas project, the Northern Rough-winged Swallow occurred fairly uniformly in priority blocks throughout the state except in the south. The distribution of the atlas records may be a reflection of the accessibility of nesting sites. This species was reported in priority blocks in 100 counties and Confirmed as breeding in 81 of them.

**Frequency**

The Northern Rough-winged Swallow was reported from 607 (60.8%) priority blocks and 104 nonpriority blocks. Breeding was Confirmed in 274 (27.5%) of the priority blocks. The most frequently used breeding evidence for Confirmed records in priority blocks was occupied nests (151 ON records), fledged young (67 FL records), and adults feeding young (29 FY records). Since this species stays fairly close to its nesting site, it is likely that nesting occurred in most blocks in which it was recorded.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	274	27.5	45.1	328	25.5
Probable	129	12.9	21.3	140	10.9
Possible	204	20.4	33.6	243	18.9
Totals	607	60.8	100.0	711	55.3

\* 998 priority blocks

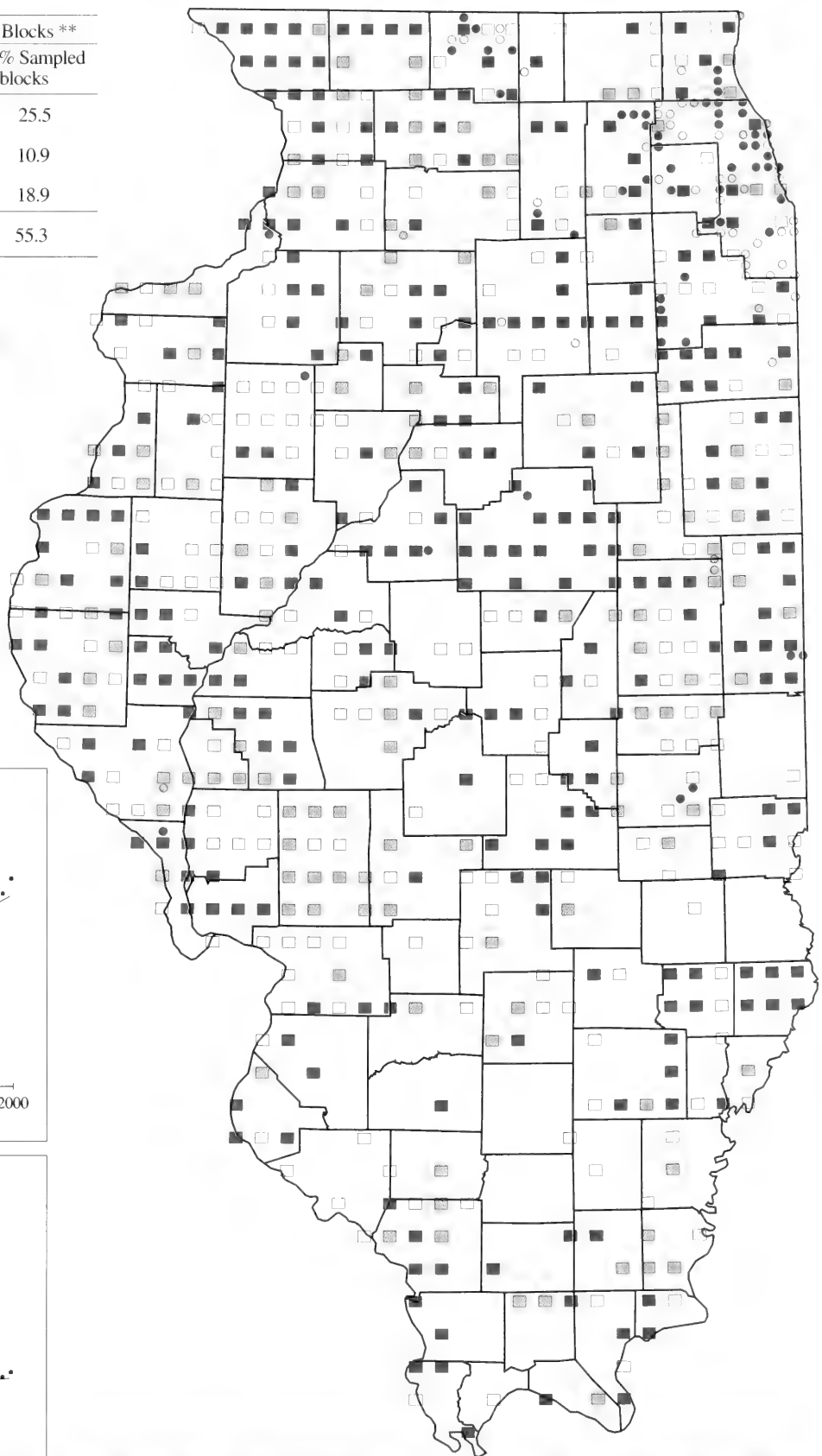
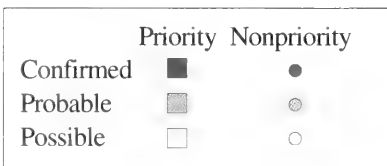
\*\* 1,286 total blocks (priority and nonpriority)



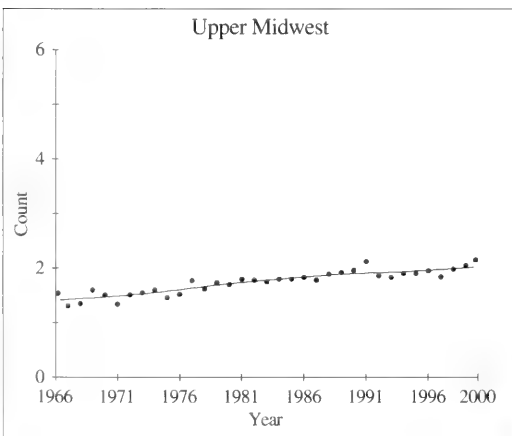
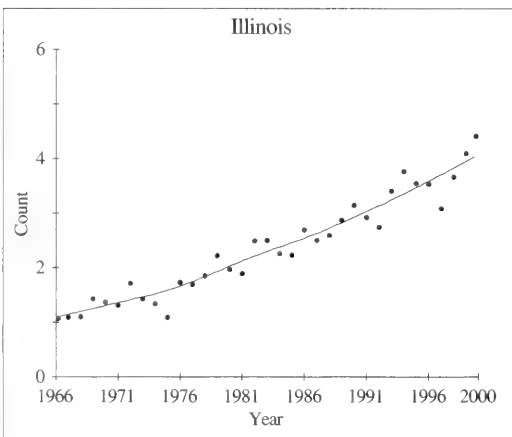
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Northern Rough-winged Swallow**



Eric Walters

**Code: BANS**

**Rangewide Distribution:** Europe, Asia, North Africa, Alaska and northern Canada, south to central South America.

**ILLINOIS**

**Abundance:** common migrant, fairly common summer resident (locally).

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open areas with cliffs or banks near running water.

**Nest:** an excavated burrow in cliff or bank lined with grass, weed stems, and feathers.

**Eggs:** 4–5, white, unmarked.

**Incubation:** 14–16 days.

**Fledging:** from 18 to 24 days.

The Bank Swallow is one of the most widely distributed swallows in the world. In North America its breeding range includes much of Canada and Alaska and the northern half of the U.S. Like the Northern Rough-winged Swallow, the Bank Swallow is a brown-backed bird. Bank Swallows are often seen over open fields and water where they forage for flying insects. It is one of only a few North American bird species that excavates its own nesting burrow. Bank Swal-

lows require near-vertical surfaces for nesting. Natural nesting sites are cliffs or banks along rivers, streams, lakes, and oceans, although road cuts, piles of sawdust, and sand and gravel quarries are also used. For protection from predators, Bank Swallows dig their burrows near the top of the vertical surface. They nest singly or in colonies that range from a few to a couple of thousand nests. Colonies may occur at the same site for many years, but are vulnerable to erosion, channelization, and cattle grazing.

**Illinois History**

In early accounts, the Bank Swallow was considered a common species wherever appropriate habitat was available (Ridgway 1889; Cory 1909). Currently it is described as a locally common summer resident with a spotty distribution during the breeding season (Bohlen 1989).

**Breeding Bird Survey Trends**

Because Bank Swallows are colonial and nesting locations are somewhat ephemeral, the Breeding Bird Survey does not provide reliable long-term trend information. The trends are estimated at 0.5% per year (nonsignificant,  $P = 0.85$ ) for Illinois and 0.6% per year (nonsignificant,  $P = 0.78$ ) for the upper Midwest for the period 1966–2000.

*Credibility Index:* IL = 1 and UM = 1.

**Distribution**

Even though Bank Swallows were reported from priority blocks in 75 counties during the atlas project, their distribution in the state was spotty because of their specialized nesting requirements. The lack of records in southern counties is somewhat surprising, although Graber et al. (1972) indicated that colonies were less common in the south than in the central and north. Bank Swallows are probably more widely distributed than the data indicate.

**Frequency**

The Bank Swallow was reported from 179 (17.9%) priority blocks and 49 nonpriority blocks. Breeding was Confirmed in 106 (10.6%) of the priority blocks, most frequently by observations of occupied nests (73 ON records). Even though Bank Swallow nesting sites can be very conspicuous, they may have been missed due to the inaccessibility of river and stream banks.



## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	106	10.6	59.2	133	10.3
Probable	16	1.6	8.9	21	1.6
Possible	57	5.7	31.8	74	5.8
Totals	179	17.9	100.0	228	17.7

\* 998 priority blocks

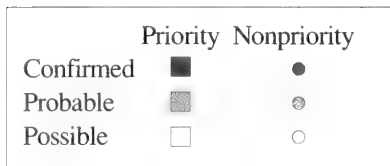
\*\* 1,286 total blocks (priority and nonpriority)



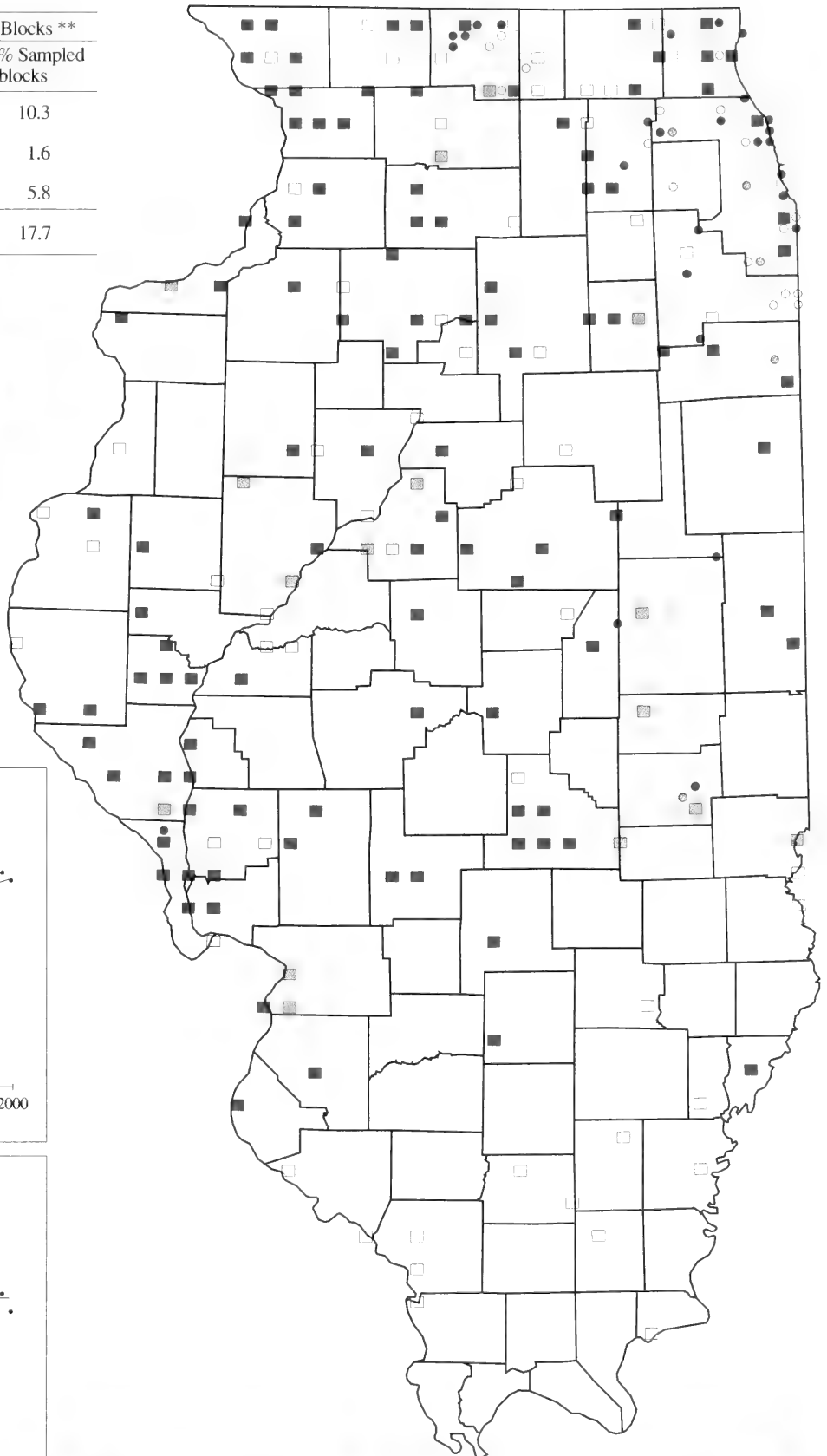
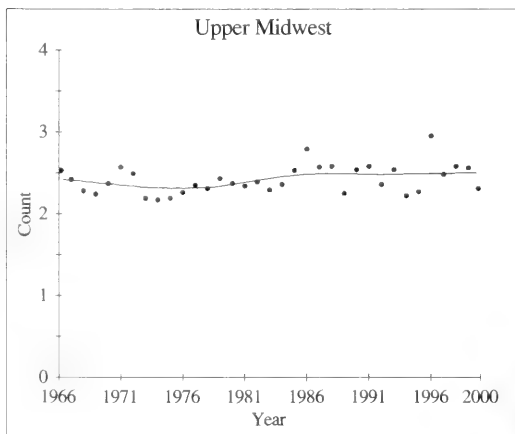
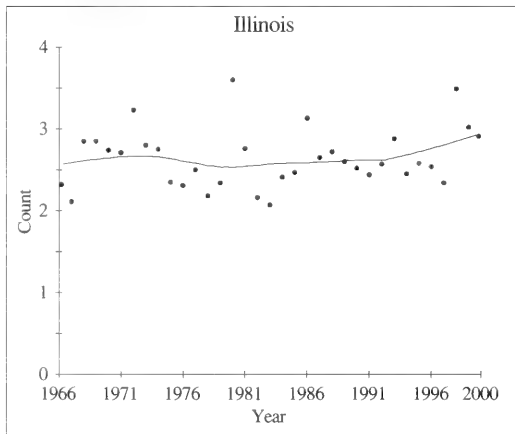
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Bank Swallow**



Robert Randall

**Code: CLSW**

**Rangewide Distribution:** most of North America, from Alaska and northern Canada to southern South America.

**ILLINOIS**

**Abundance:** fairly common migrant and (local) summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open country usually near rivers and streams; associates with overhanging cliffs and bridges.

**Nest:** gourd-shaped structure of mud pellets lined with grass and feathers, plastered to the side of cliffs or under the eaves of buildings and bridges.

**Eggs:** 4–5, white, creamy or pinkish white, spotted with brown.

**Incubation:** 14–16 days.

**Fledging:** from 21 to 24 days.

Cliff Swallows breed in most of North America from Alaska and northern Canada to Central America, including most of the U.S. except the southeastern region. The Cliff Swallow is similar in appearance to the Barn Swallow but has a squared tail, buffy forehead, and tan rump patch. The species is now found in a variety of habitats, including grasslands, residential areas, open woodland, and forest edge. It is often seen flying over open areas, foraging for insects, which is its primary food source throughout the year. Cliff Swallows build distinctive, nearly enclosed gourd-shaped nests consisting of hundreds of mud pellets. It is a colonial nesting species; nests are built on vertical surfaces near water and are often bunched or plastered together under bridges, overhangs of dams, and eaves of buildings, or in more natural settings,

on bluffs or cliffs with overhanging ledges. Cliff Swallows compete with House Sparrows for nest sites; House Sparrows may destroy eggs in many nests in order to usurp a nest site (Brown and Brown 1995). In the past 100 years the species range has expanded due to construction of buildings, bridges, and culverts, which provide nesting sites (Brown and Brown 1995).

**Illinois History**

A hundred years ago the Cliff Swallow was a common summer resident (Cory 1909) and locally abundant (Ridgway 1889) with the greatest numbers in the northern region of the state. The Cliff Swallow population declined considerably and even disappeared in some areas with the invasion of House Sparrows, which compete with Cliff Swallows for nesting sites (Graber et al. 1972).

**Breeding Bird Survey Trends**

According to BBS data, this species was not very abundant during the 1966–1979 period in Illinois and there were not enough data to estimate a trend for that period. In Illinois the trend for 1966–2000 is estimated at 28.3% per year (nonsignificant,  $P = 0.11$ ). In the upper Midwest the BBS data indicate a 2.1% (significant,  $P = 0.03$ ) annual increase in population from 1966 to 2000.

*Credibility Index: IL = 3 and UM = 1.*

**Distribution**

Cliff Swallows were formerly distributed throughout the state but most abundant in the northern region. After having disappeared from much of the state for several decades, they now occur statewide. Cliff Swallows were reported most frequently from the priority blocks in the northwestern part of the state and were sparsely distributed in the rest of the state. They were reported in priority blocks in 50 counties. Many remote nesting sites were probably missed during the atlas project.

**Frequency**

Of the six species of swallows that breed in Illinois, the Cliff Swallow was reported from the fewest number of priority blocks during the atlas project. It was reported from 115 (11.5%) priority blocks and 20 nonpriority blocks. Breeding was Confirmed in 75 (7.5%) of the priority blocks, most commonly by observation of an occupied nest (41 ON records). These swallows are easy to see as they forage over open areas. When present in a block, they could often be Confirmed by their distinctive nests.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	75	7.5	65.2	89	6.9
Probable	15	1.5	13.0	15	1.2
Possible	25	2.5	21.7	31	2.4
Totals	115	11.5	100.0	135	10.5

\* 998 priority blocks

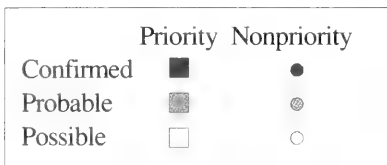
\*\* 1,286 total blocks (priority and nonpriority)



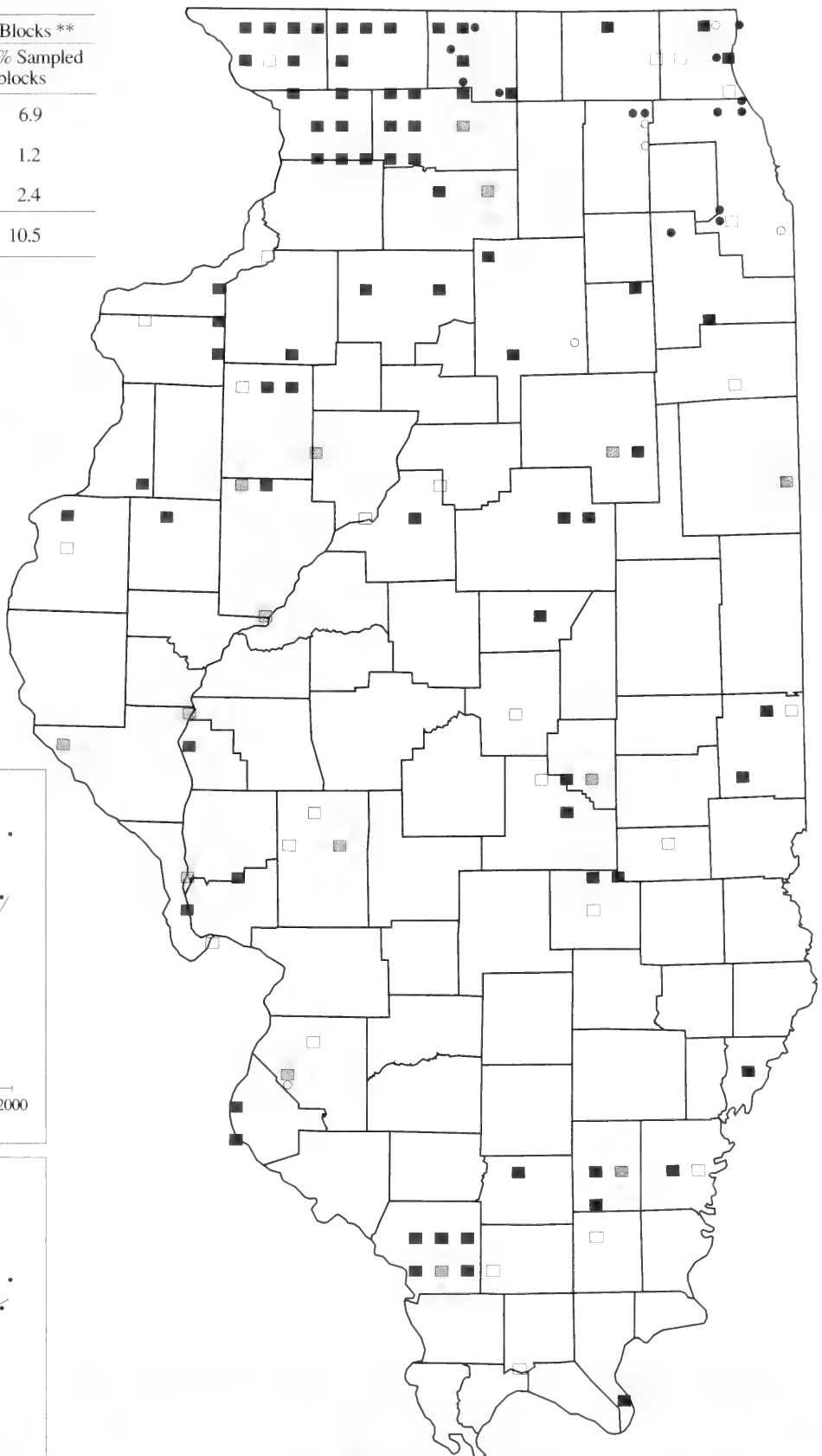
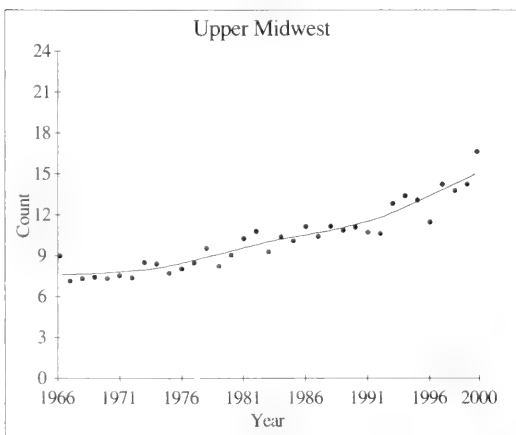
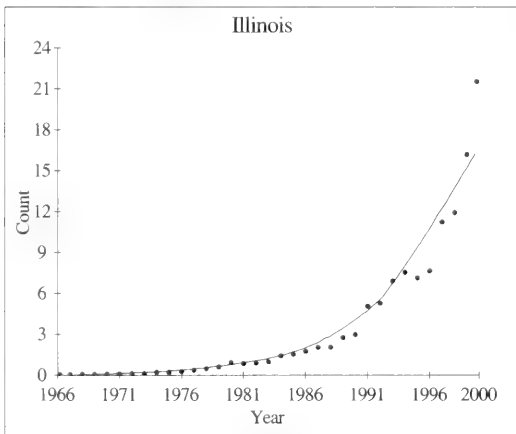
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Cliff Swallow**



Dennis Oehmke

**Code:** BARS

**Rangewide Distribution:** cosmopolitan, including most of North and South America.

**ILLINOIS**

**Abundance:** very common migrant and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** agricultural and open country areas, especially near water.

**Nest:** a cup of straw and mud pellets lined with feathers, plastered on ledges and walls of buildings and bridges.

**Eggs:** 4–5, white, spotted with browns.

**Incubation:** 13–17 days.

**Fledging:** from 18 to 23 days.

The Barn Swallow is the most abundant and widely distributed swallow in the world. It nests throughout the Northern Hemisphere, including most of the U.S., Canada, and Mexico, and is perhaps the only northern temperate breeding species that occasionally nests in South America (Brown and Brown 1999). Its darting flight and forked tail are distinguishing features. Barn Swallows spend most of the day foraging for flying insects over open areas, such as farms, meadows, or lakes. Nests, which are made of mud pellets, are located on horizontal or rough vertical surfaces sheltered from the rain. In North America, Barn Swallows are much more abundant and widespread now than prior to Euro-American settlement because they have readily adapted to the use of artificial structures, such as buildings, bridges, and

culverts for nesting sites (Brown and Brown 1999). By the mid-1900s, Barn Swallows in North America nested almost exclusively on artificial structures as opposed to their original nesting habitat of caves (Brown and Brown 1999).

**Illinois History**

The Barn Swallow was a common and widely distributed species, according to early accounts (Ridgway 1889; Cory 1909). In the early 1900s there was a dramatic population decline, especially in southern Illinois, when the House Sparrow population was rapidly expanding in Illinois (Ridgway 1915). The breeding population rebounded and in 1957 the population was nearly triple the size of that in 1909, with the greatest numbers occurring in southern Illinois (Graber and Graber 1963).

**Breeding Bird Survey Trends**

From 1966 to 2000 the population trend for the Barn Swallow is estimated at 0.7% per year (nonsignificant,  $P = 0.17$ ) in Illinois. During the first subinterval (1966–1979), the trend estimate was positive and significant at 4.6% per year (significant,  $P = 0.01$ ). The upper Midwest trend estimates are significant during both the 1966–1979 and 1980–2000 subintervals at 4.9% per year ( $P < 0.01$ ) and –1.5% per year ( $P < 0.01$ ), respectively. From 1966 to 2000 the trend for the upper Midwest is estimated at 0.1% per year (nonsignificant,  $P = 0.69$ ).

**Credibility Index:**  $IL = 2$  and  $UM = 2$ .

**Distribution**

The Barn Swallow was found throughout the state during the atlas project. It was found in every county and in nearly all the priority blocks (Table 4).

**Frequency**

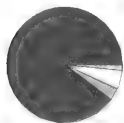
The Barn Swallow is the most common of the six swallow species that breed in Illinois. This species was reported from 983 (98.5%) priority blocks and 168 nonpriority blocks. Breeding was Confirmed in 897 (89.9%) of the priority blocks. Barn Swallows are easy to find, identify, and confirm as nesting. The breeding evidence criteria most frequently used for Confirmed records in priority blocks were occupied nests, fledged young, and nest with young (333 ON, 169 FL, and 158 NY records, respectively). It is likely that this species nested in nearly all atlas blocks in which it was recorded.

## Breeding Evidence

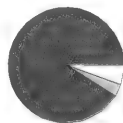
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	897	89.9	91.3	1,021	79.4
Probable	34	3.4	3.5	49	3.8
Possible	52	5.2	5.3	81	6.3
Totals	983	98.5	100.0	1,151	89.5

\* 998 priority blocks

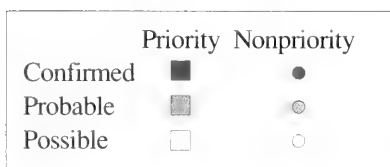
\*\* 1,286 total blocks (priority and nonpriority)



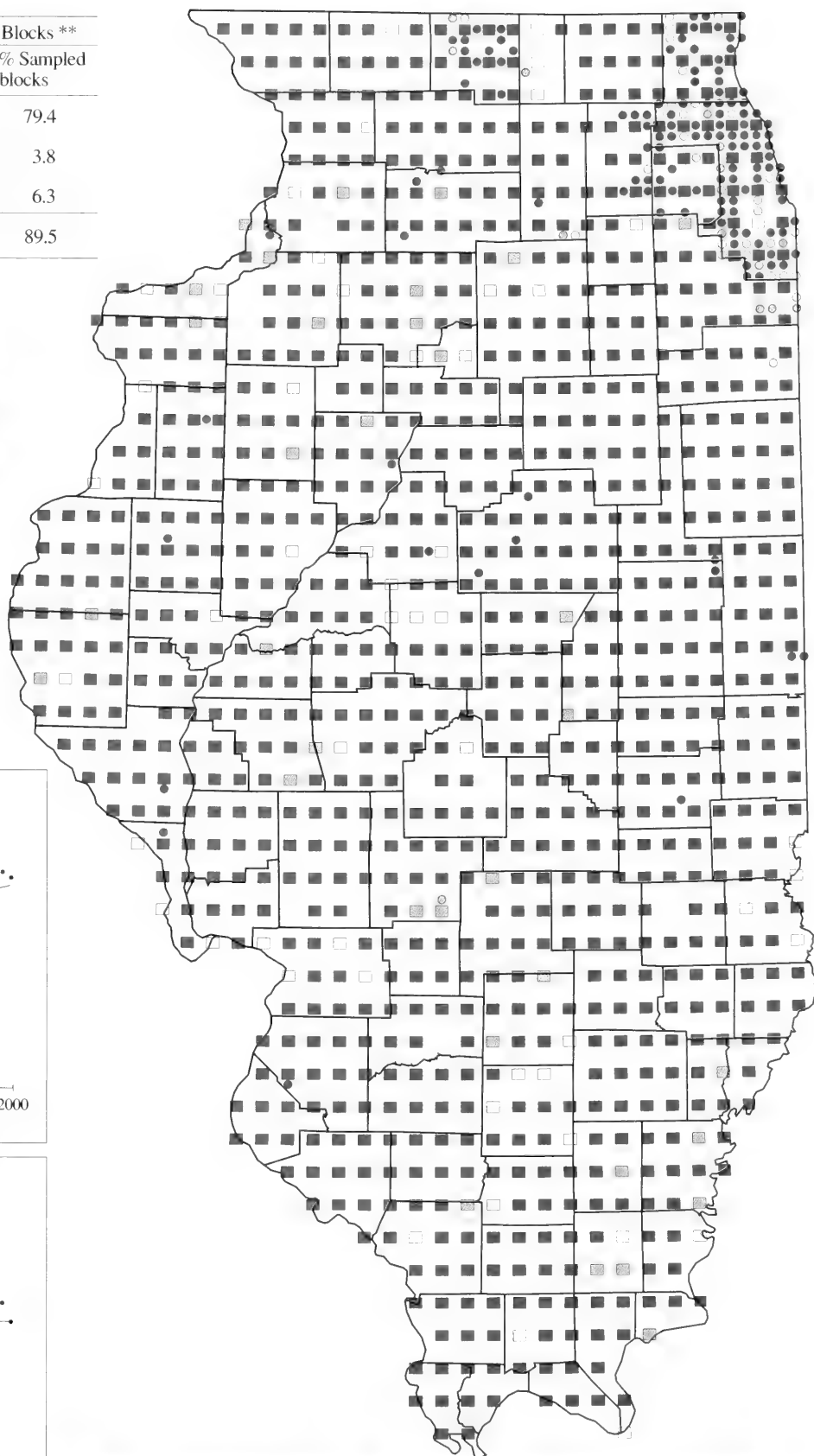
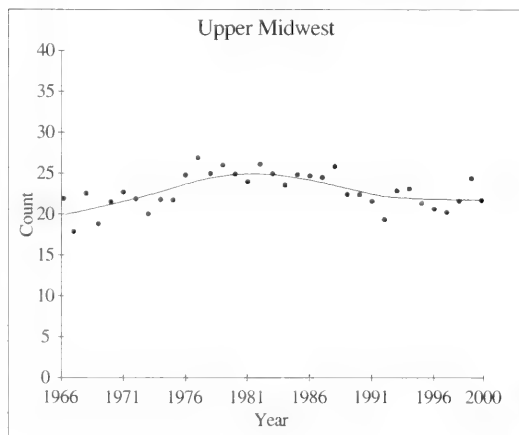
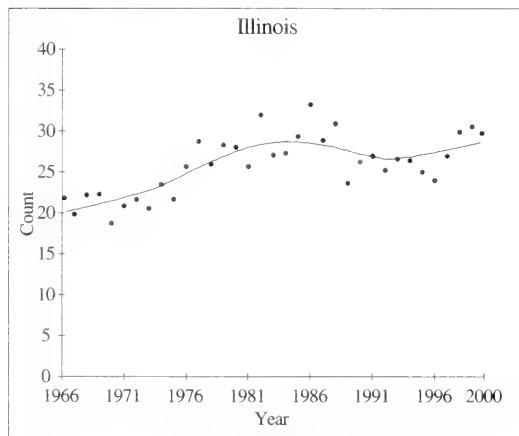
% of 998 sampled priority blocks (gray = no records for this species)



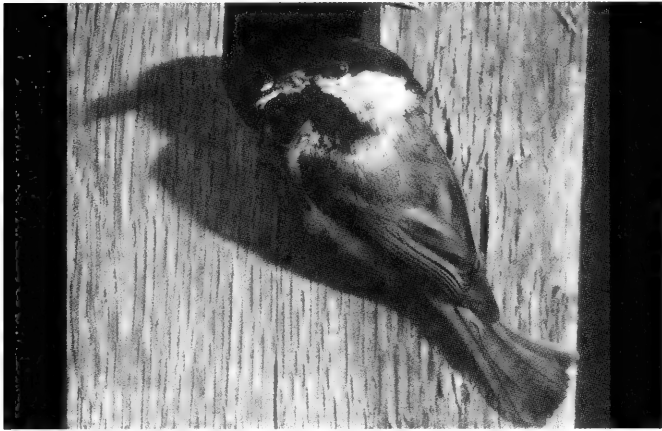
% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Barn Swallow**



Todd Fink / Daybreak Imagery

**Code:** CACH

**Range-wide Distribution:** southeastern U.S.

## ILLINOIS

**Abundance:** very common permanent resident in south and southeast.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous woods, especially riparian swamps, and parks.

**Nest:** a tree cavity lined with moss, grass, plant down, feathers, and hair; also, nest boxes.

**Eggs:** 6, white, marked with reddish browns.

**Incubation:** 11–12 days.

**Fledging:** from 13 to 17 days.

The Carolina Chickadee is an active woodland bird that breeds mainly in the southeastern U.S. It is nearly identical in appearance and shares the same habitat preferences and nesting behavior as the Black-capped Chickadee. The male Carolina Chickadee's spring song, "see bee see bay," helps to distinguish between the two species in areas where their ranges meet. The range of the Carolina is generally south of that of the Black-capped Chickadee. Both chickadees occur in mature and second-growth forests and their associated edges, older residential areas, and parks with plenty of mature shade trees. Carolina Chickadees nest in a variety of cavities, including old woodpecker holes, natural snags, and nest boxes, and on occasion will excavate its own cavity in

the soft, rotting wood of an old stump, post, or snag. They are usually single brooded and nesting begins early in the spring (Mostrom et al. 2002), as early as the first week of March in Illinois. Carolina Chickadees eat insects and spiders that they glean from trees and are frequent visitors to yards with feeders.

## Illinois History

During the late 1800s and early 1900s, the Carolina Chickadee was considered a common species limited to southern Illinois (Cory 1909). By the 1950s Carolina Chickadees were estimated to be four times as common as in the early 1900s (Graber and Graber 1963).

## Breeding Bird Survey Trends

For the period 1966–2000 the trend estimates for the Carolina Chickadee are  $-0.8\%$  per year (nonsignificant,  $P = 0.48$ ) for Illinois and  $-0.1\%$  per year (nonsignificant,  $P = 0.91$ ) for the upper Midwest.

*Credibility Index: IL = 1 and UM = 1.*

## Distribution

The Carolina Chickadee is found in the southern and southeastern part of the state; the northern edge of its range begins near St. Louis in southern Madison County, proceeds eastward through northern Clinton County, then diagonals northeastward from Fayette County to southern Ford and northern Vermilion counties. Carolinas were reported in priority blocks in 42 counties. Black-capped Chickadees generally occur to the north and west of the Carolina; there is little overlap of their ranges. Both species were found in 8 counties (St. Clair, Madison, Fayette, Effingham, Coles, Douglas, Champaign, and Ford); some of these may have been hybrids but were not identified as such.

## Frequency

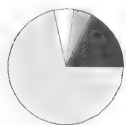
The Carolina Chickadee was reported from 283 (28.4%) priority blocks and 6 nonpriority blocks. It was Confirmed as breeding in 176 (17.6%) of the priority blocks. Even though several nests were reported, most Confirmed records in priority blocks were observations of adults feeding young (76 FY records) or fledged young (75 FL records). Since these chickadees have a restricted home range and stay close to their nesting sites year-round, it is likely that nesting occurred in the blocks where they were recorded.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	176	17.6	62.2	181	14.1
Probable	52	5.2	18.4	53	4.1
Possible	55	5.5	19.4	55	4.3
Totals	283	28.4	100.0	289	22.5

\* 998 priority blocks

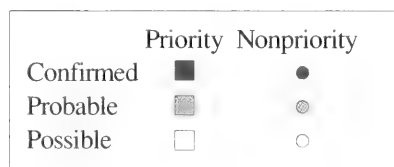
\*\* 1,286 total blocks (priority and nonpriority)



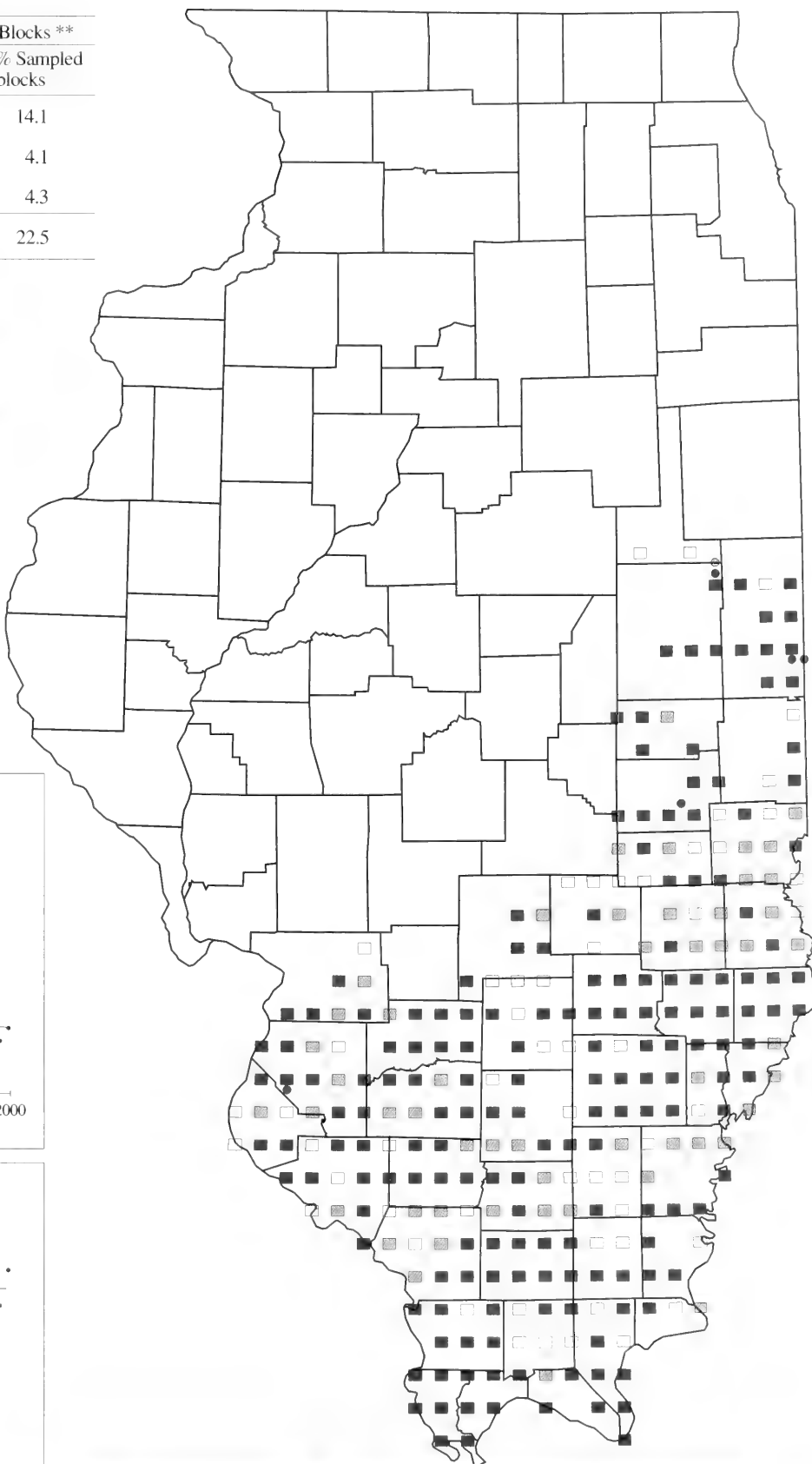
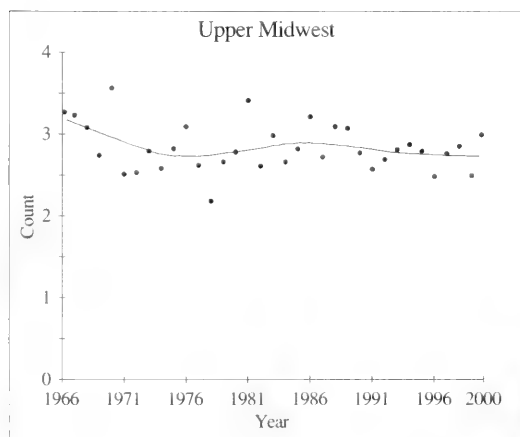
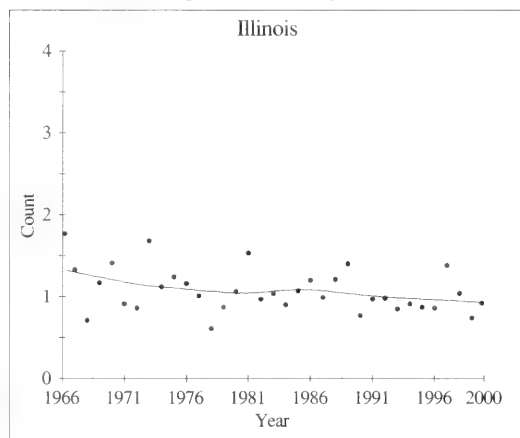
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

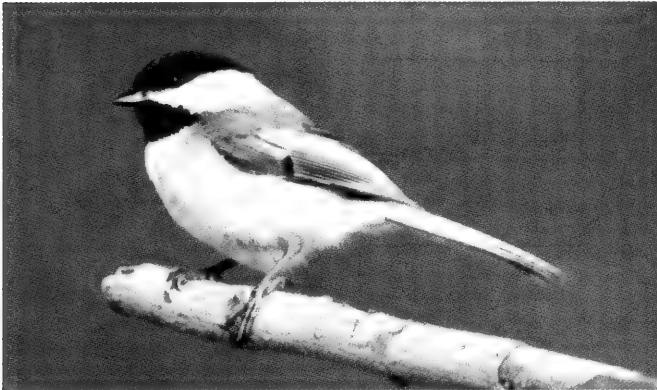


## Breeding Bird Survey Trends



**Carolina Chickadee**





Dennis Oehmke

**Code: BCCH**

**Rangewide Distribution:** Alaska and the southern half of Canada, south through the northern half of the U.S.

**ILLINOIS**

**Abundance:** very common permanent resident in west and north.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** mature and second-growth woodlands, including edges, residential areas, and parks.

**Nest:** a tree cavity lined with plant down, moss, hair, and feathers; also nest boxes.

**Eggs:** 6–8, white, finely marked with reddish browns.

**Incubation:** 11–13 days.

**Fledging:** from 14 to 18 days.

body temperature at night to conserve energy (Smith 1993). Black-capped Chickadees forage in trees for insects and spiders, and eat seeds and berries in winter.

**Illinois History**

In the 1800s and early 1900s the Black-capped Chickadee was considered a common permanent resident in the north and a very rare and irregular visitor in the south when winters were particularly cold (Ridgway 1889; Cory 1909). The status of the Black-capped Chickadee is nearly the same today.

**Breeding Bird Survey Trends**

In Illinois the trend estimate for 1966–2000 is 2.0% per year (nonsignificant,  $P = 0.18$ ). In the upper Midwest the population increased during 1966–2000 and both subintervals (1966–1979 and 1980–2000); the annual rate for 1966–2000 was 2.1% (significant,  $P < 0.01$ ).

**Credibility Index:**  $IL = 1$  and  $UM = 1$ .

**Distribution**

Black-capped Chickadees occur in the northern, central, and western portions of the state. During the atlas project, this species was found in priority blocks in 69 counties. Carolina Chickadees occur to the south and southeast of the Black-cappeds, with little overlap of their ranges (see Carolina Chickadee account). In the eastern part of the state (i.e., Ford, Iroquois, Piatt, and Livingston counties) there are few records of either species. Even though this area is highly agricultural, the scarcity of chickadees needs further investigation. Brewer (1963) reported gaps of up to several miles from Illinois eastward where there were few, if any, chickadees of either species. Hybrids of Black-capped and Carolina chickadees have been known to occur where their ranges meet.

**Frequency**

The Black-capped Chickadee was reported from 564 (56.5%) priority blocks and 161 nonpriority blocks. Breeding was Confirmed in 362 of the priority blocks, with fledged young and adults feeding young (186 FL and 116 FY records, respectively) as the most frequently used breeding evidence criteria for these records. Since these birds have a restricted home range and stay close to their nesting sites year-round, it is likely that nesting occurred in every block where the species was recorded.

Like the more southerly Carolina Chickadee, the Black-capped is a permanent resident found in nearly all woodland habitats ranging from dense mature forests and their woody edges to residential areas and parks with plenty of mature shade trees. Its breeding range is generally the northern half of the U.S. and the southern half of Canada. The male's spring song, a high-pitched "fee-bee," distinguishes the Black-capped from the nearly identical Carolina where their ranges meet. The Black-capped nests in cavities in dead branches and sometimes in abandoned woodpecker holes or nest boxes. Black-capped Chickadees generally remain near their breeding territory for life (Smith 1993). During the winter, this chickadee is known to store food and lower its

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	362	36.3	64.2	471	36.6
Probable	119	11.9	21.1	150	11.7
Possible	83	8.3	14.7	104	8.1
Totals	564	56.5	100.0	725	56.4

\* 998 priority blocks

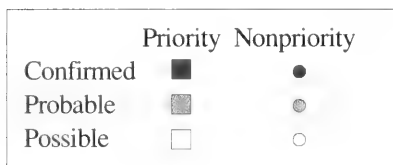
\*\* 1,286 total blocks (priority and nonpriority)



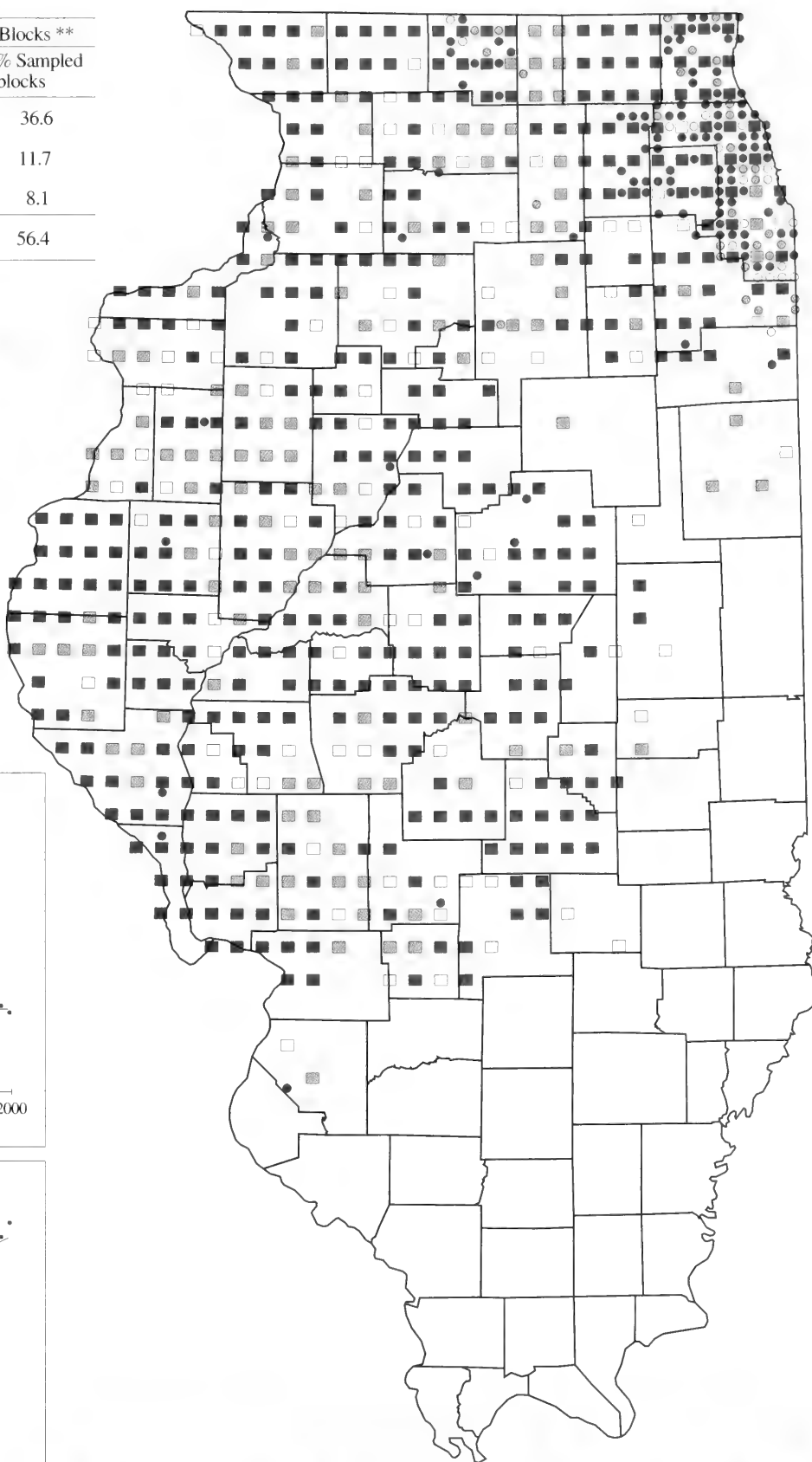
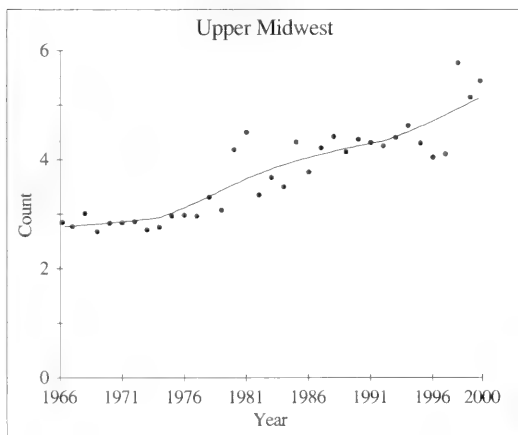
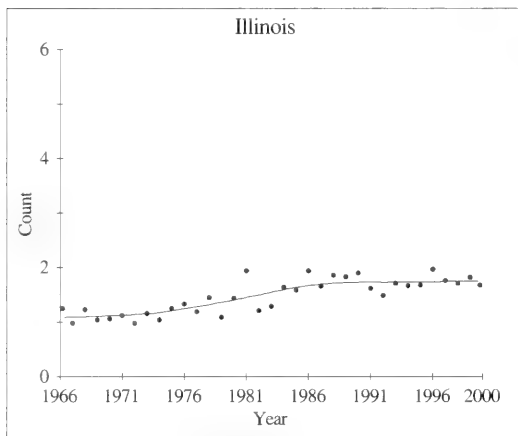
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



***Black-capped Chickadee***



Dennis Oehmke

**Code:** ETTI

**Rangewide Distribution:** eastern U.S. and northeastern Mexico.

**ILLINOIS**

**Abundance:** common permanent resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** mature and second-growth woodlands, including edges, residential areas and parks.

**Nest:** a tree cavity lined with moss, fur, bark, leaves and grass.

**Eggs:** 5–7, white to creamy-white, spotted with browns (occasionally wreathed).

**Incubation:** 13–14 days.

**Fledging:** from 15 to 18 days.

The Tufted Titmouse breeds in the eastern half of the U.S. and northeastern Mexico. It is a common and active permanent resident of woodlands, especially mature deciduous forests in eastern North America. Its “peter-peter” call, whistled notes, and scolding sounds are distinctive indicators of its presence. Titmice are found in a variety of upland and bottomland forests, including parks and residential areas. Nests are usually built in existing cavities but titmice may excavate their own or use nest boxes. The young do not disperse until sometime in their second year (Grubb and Pravosudov 1994) and some yearling titmice stay with their parents and help them raise another brood (Tarbel 1983). Titmice forage for insects and seeds, often with chickadees and nuthatches; and like chickadees, nuthatches, and some woodpeckers, are known to cache large amounts of food

throughout their territories (Sherry 1989). Tufted Titmice have been able to survive farther north than in the past, in part because of the availability of seed at bird feeders in the winter. Because of their small size, they probably have little competition for nesting cavities from larger forest species, but may compete with chickadees and nuthatches.

**Illinois History**

During the 1800s, the Tufted Titmouse was considered to be the most abundant woodland bird in southern Illinois (Ridgway 1889) but rare in the northern part of the state (Cory 1909). Cory (1909) noted a single record of its occurrence in Wisconsin. From 1909 to 1957 the population in Illinois increased approximately twofold in numbers, especially in the south, and although not yet common, the Tufted Titmouse was not as rare in the north as it had been in the early 1900s (Graber and Graber 1963).

**Breeding Bird Survey Trends**

Tufted Titmice populations in Illinois increased at an annual rate of 2.0% (significant,  $P < 0.01$ ) from 1966 to 2000. For the upper Midwest the trend estimate for the same period is 0.9% per year (nonsignificant,  $P = 0.08$ ); for the two sub-intervals the trend estimates are –4.3% per year (significant,  $P < 0.01$ ) for 1966–1979 and 2.1% per year (significant,  $P < 0.01$ ) for 1980–2000.

*Credibility Index:* IL = 1 and UM = 2.

**Distribution**

During the atlas project, Tufted Titmice were found in priority blocks in 99 counties. They were most frequently reported from priority blocks in the counties along the Mississippi and Illinois rivers and in the southern half of Illinois. Gaps in distribution correspond to areas with limited availability of suitable woodland habitat, such as areas of extensive agricultural land cover.

**Frequency**

The Tufted Titmouse was reported from 682 (68.3%) priority blocks and 51 nonpriority blocks. Breeding was Confirmed in 356 (35.6%) of the priority blocks, with fledged young (186 FL records) and adults feeding young (135 FY records) the most commonly used breeding evidence criteria. Like the chickadees, these birds have restricted home ranges and stay close to their nesting sites year-round. Therefore, it is likely that nesting occurred in blocks where the species was recorded. Because they are less vocal and conspicuous during the nesting period, it is possible that this species was underrepresented in the atlas data.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	356	35.7	52.2	381	29.6
Probable	163	16.3	23.9	177	13.8
Possible	163	16.3	23.9	175	13.6
Totals	682	68.3	100.0	733	57.0

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



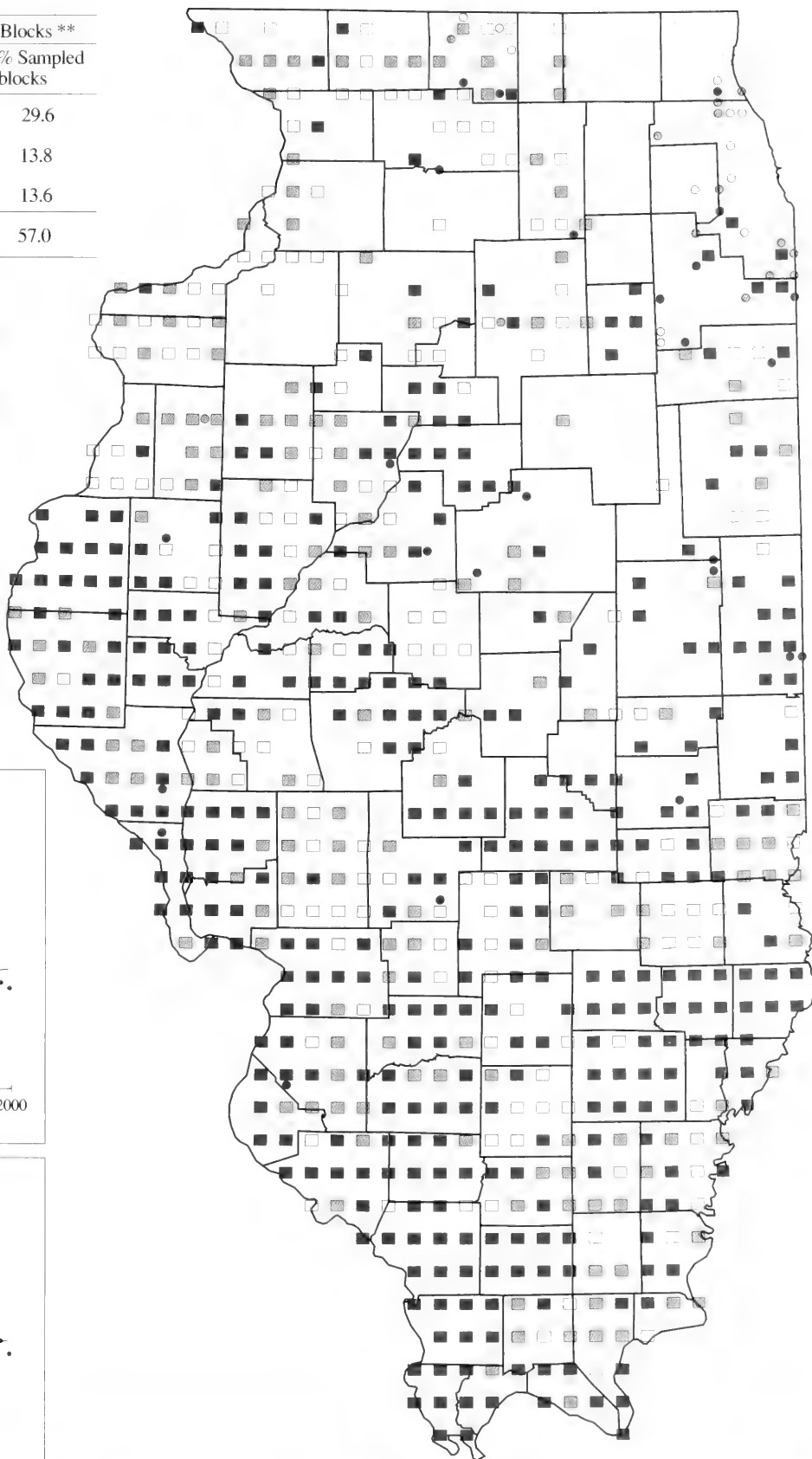
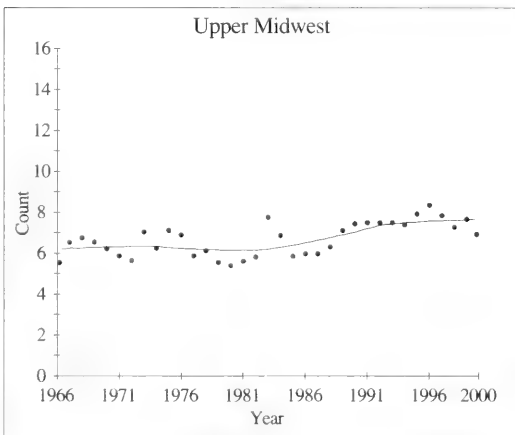
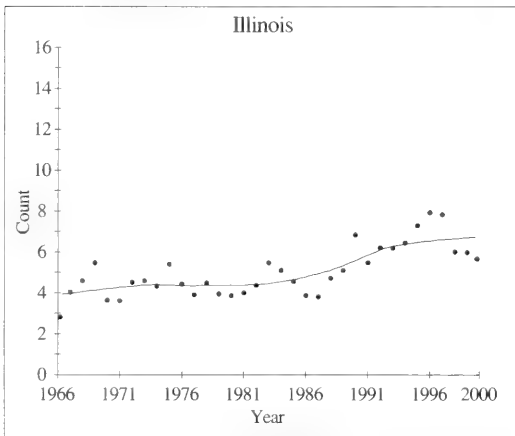
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○

## Breeding Bird Survey Trends



**Tufted Titmouse**



Adam Fikso

**Code: RBNU**

**Rangewide Distribution:** southern half of Canada, northeastern and western U.S. Occasionally winters in southern U.S.

**ILLINOIS**

**Abundance:** sporadic; a fairly common migrant and winter resident some years; very rare summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** coniferous forests.

**Nest:** a tree cavity lined with soft bark, grass, and roots.

**Eggs:** 5–6, white to pinkish white, marked with reddish brown.

**Incubation:** 12 days.

**Fledging:** from 14 to 21 days.

A common resident in the boreal forests of North America, the Red-breasted Nuthatch breeds primarily in the northern and western U.S. and across the southern half of Canada. Large numbers of individuals can be found outside the normal range when the species undergoes irruptive movements, which may be driven by winter food shortages (Ghalambor and Martin 1999). Its preferred nesting habitat is

dense stands of mature coniferous trees, especially spruce and fir. In addition to its smaller size and reddish underparts, the Red-breasted can be distinguished from the White-breasted Nuthatch by its higher-pitched, more nasal-sounding call notes. Both species are cavity nesters. The Red-breasted usually excavates its own cavity in soft or rotting snags and tree limbs but occasionally uses old woodpecker holes or nest boxes. The population appears to have expanded to the south and east in recent years (Ghalambor and Martin 1999).

**Illinois History**

The Red-breasted Nuthatch is an erratic wanderer and occurs only rarely as a breeding species in Illinois. During the late nineteenth and early twentieth century, the Red-breasted Nuthatch bred sparingly (Ridgway 1889) and was a casual summer resident (Cory 1909) in the extreme northern counties. During the late twentieth century, the species was still a very rare breeder. Isolated nesting occurrences have been reported as far south as Champaign County since the mid-1970s.

**Breeding Bird Survey Trends**

The BBS data is not sufficient to estimate population trends for this species in Illinois. The trend estimate for 1966–2000 for the upper Midwest indicates an annual increase in population of 3.0% (significant ( $P < 0.01$ )).

*Credibility Index: IL = none and UM = 1.*

**Distribution**

Two nesting sites were reported during the atlas project. Red-breasted Nuthatches should be sought in the larger coniferous forests that occur in the northern counties.

**Frequency**

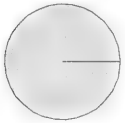
The Red-breasted Nuthatch was reported from one (0.1%) priority block and one nonpriority block. Breeding was Confirmed (three young fledged) in the priority block (at the Morton Arboretum in DuPage County) and the nonpriority block (in Kane County).

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	100.0	2	0.2
Probable	0	0.0	0.0	0	0.0
Possible	0	0.0	0.0	0	0.0
Totals	1	0.1	100.0	2	0.2

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

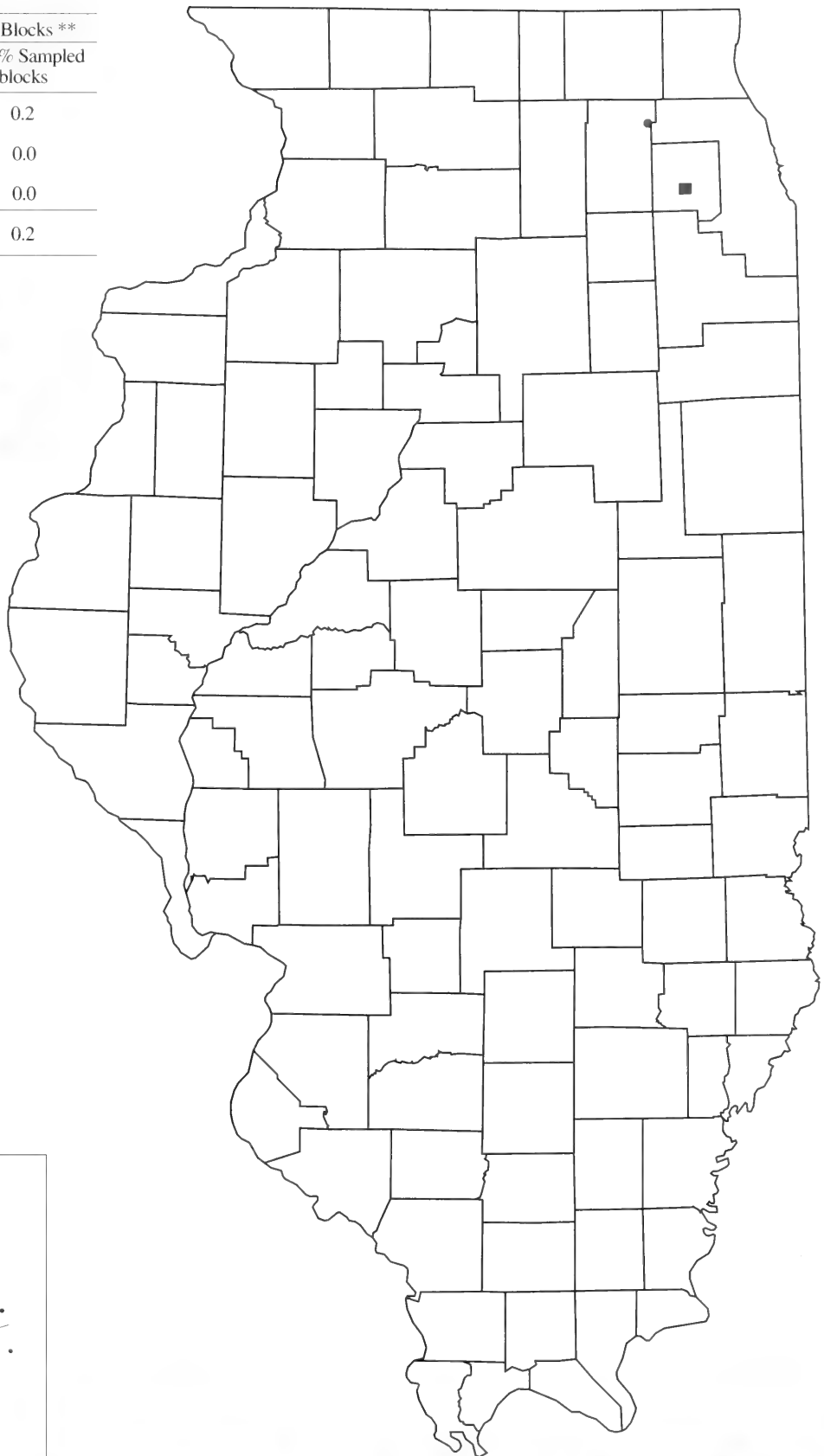


% of 998 sampled priority blocks (gray = no records for this species)

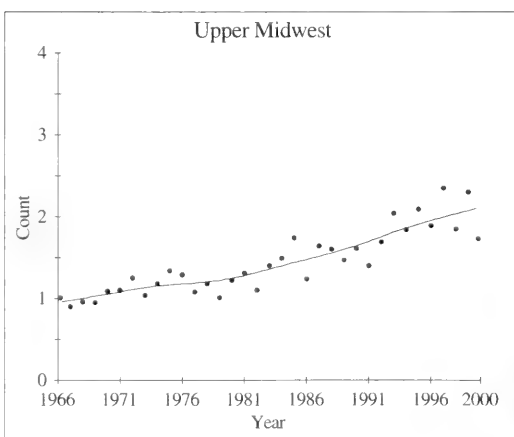


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Red-breasted Nuthatch**





Dennis Oehmke

Code: WBNU

Rangewide Distribution: southern Canada, most of the U.S., and central Mexico.

## ILLINOIS

Abundance: common permanent resident.

Endangered/Threatened Status: none.

Breeding Habitat: deciduous woodlands with decaying trees.

Nest: a tree cavity lined with soft bark shreds, hair, and feathers, often in dead portion of a live tree.

Eggs: 5-8, white to pinkish white, (usually) heavily marked with reddish brown at the larger end.

Incubation: 12 days.

Fledging: 14 days.

The White-breasted Nuthatch is a common resident found in deciduous forests from southern Canada to Mexico, including most of the U.S. This woodland species prefers large forests, but is occasionally found in towns and parks. A distinctive “yank-yank” call and habit of descending down a tree trunk head-first are identifying features. The White-breasted Nuthatch is a cavity-nesting species that utilizes natural cavities or old woodpecker holes in trees in mature deciduous forests. These nuthatches are monogamous and

remain in the same area year-round. They eat seeds, acorns, and insects gleaned from tree bark and also frequent bird feeders. In fall and winter they cache food. White-breasteds are usually found foraging with chickadees, titmice, and woodpeckers. The continued presence of dead or dying trees in mature forests for nesting and foraging is necessary for maintaining the White-breasted Nuthatch population.

## Illinois History

The White-breasted Nuthatch is a permanent resident in Illinois. During the late 1800s, it was considered abundant throughout the state (Ridgway 1889) and in the early 1900s was called “a not uncommon resident” (Cory 1909). The White-breasted Nuthatch is still a common species today and is the more abundant of the two nuthatch species that occur in Illinois.

## Breeding Bird Survey Trends

Over the past three decades the White-breasted Nuthatch population has increased in the state and region. The population increased at a rate of 4.1% per year (significant,  $P < 0.01$ ) in Illinois and at 1.8% per year ( $P < 0.01$ ) in the upper Midwest from 1966 to 2000.

Credibility Index: IL = 1 and UM = 1.

## Distribution

White-breasted Nuthatches were widespread during the atlas project. They were reported in priority blocks in all 102 counties. Gaps in distribution, such as in the east-central part of the state, may be a result of the scarcity of large forested tracts.

## Frequency

The White-breasted Nuthatch was reported from 711 (71.2%) priority blocks and 112 nonpriority blocks. Breeding was Confirmed in 272 (27.3%) of the priority blocks, with fledged young (156 FL records) and adults feeding young (83 FY records) the most frequently used breeding evidence criteria. As with titmice and chickadees, White-breasted Nuthatches have restricted home ranges and stay close to their nesting sites year-round; therefore, it is likely that nesting occurred in most blocks where they were recorded.



## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	272	27.3	38.3	325	25.3
Probable	225	22.5	31.6	260	20.2
Possible	214	21.4	30.1	238	18.5
Totals	711	71.2	100.0	823	64.0

\* 998 priority blocks

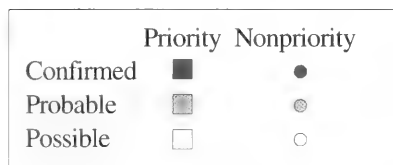
\*\* 1,286 total blocks (priority and nonpriority)



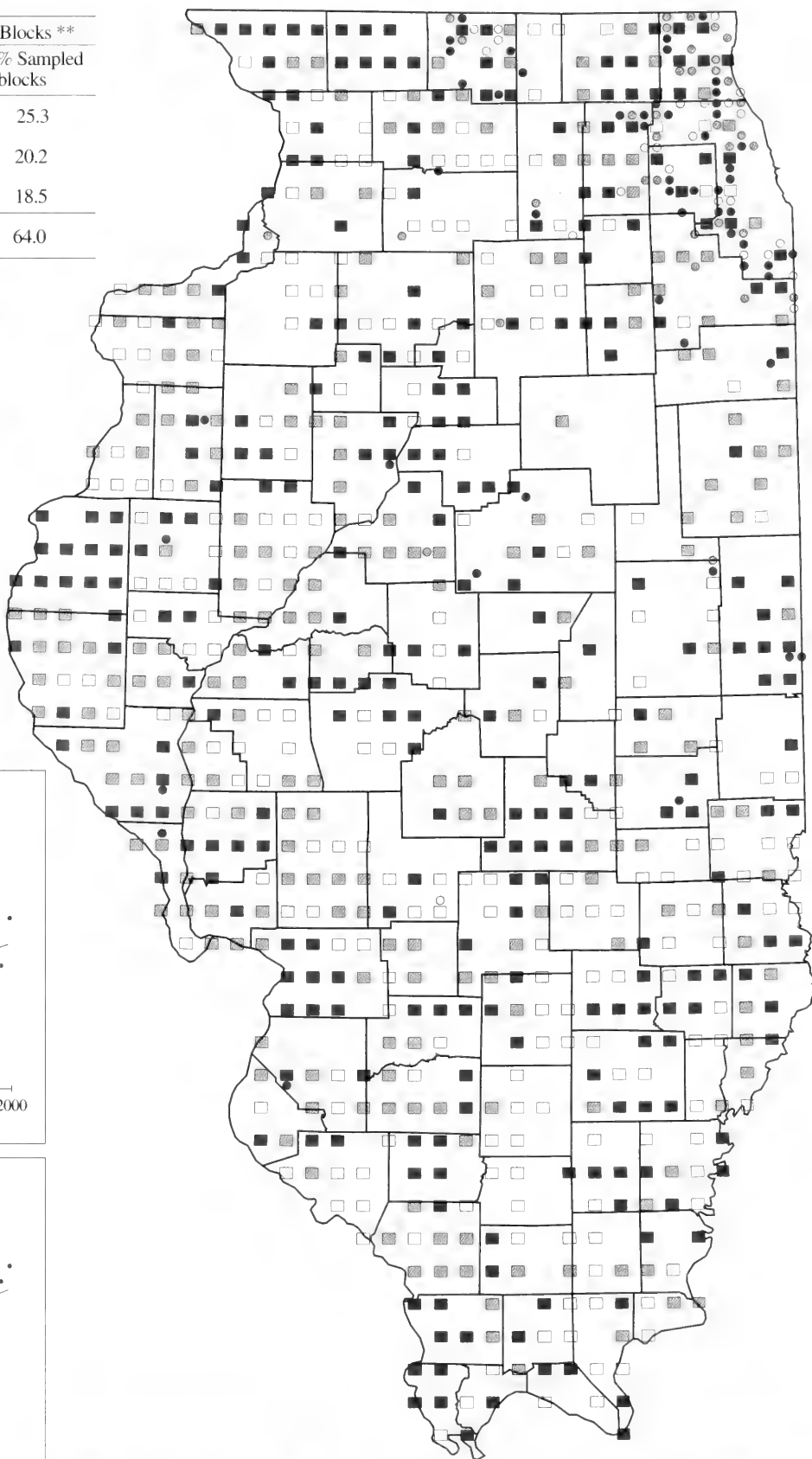
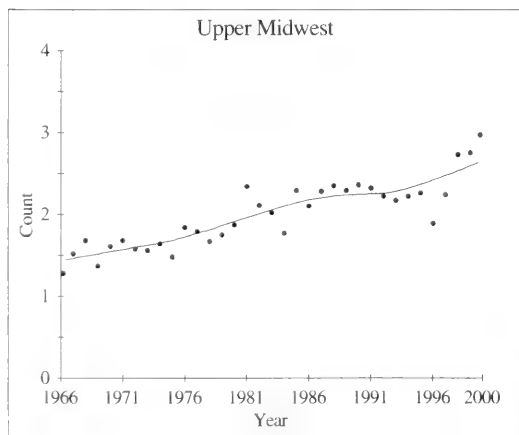
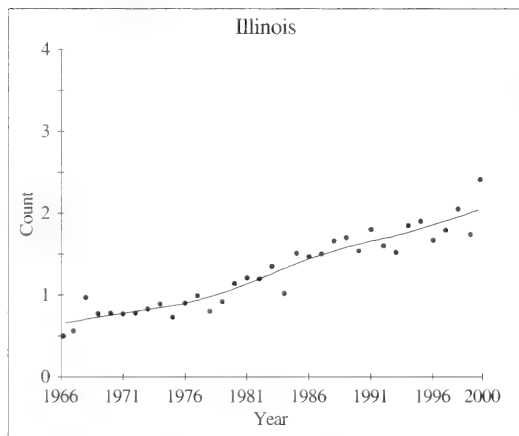
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**White-breasted Nuthatch**



Dennis Oehmke

**Code:** BRCR

**Rangewide Distribution:** southern Canada, all of the U.S., into Central America.

**ILLINOIS**

**Abundance:** common migrant, fairly common winter resident and rare local summer resident.

**Endangered/Threatened Status:** threatened

**Breeding Habitat:** swamps and floodplain forests.

**Nest:** a hammock-like cup under loose bark, made of bark, moss, conifer needles, and silk; lined with shredded bark and feathers.

**Eggs:** 5–6, white, with sparse reddish brown flecks.

**Incubation:** 14–17 days.

**Fledging:** from 13 to 16 days.

The Brown Creeper is an inconspicuous tree-climbing species with a wide distribution in the coniferous and mixed coniferous-deciduous forests in North America. The breeding range is complex; generally it includes the northeastern and western U.S., southern Canada, and parts of Mexico and Central America. This species is difficult to detect because of its secretive behavior and cryptic coloration. Its song is soft, pleasant, and warblerlike but its call note is so high-pitched that some people are unable to hear it. Brown Creepers search for insects under the bark of trees by spiraling upward around the trunks and main branches. During migration and the winter months, they occur in almost any wooded area. Brown Creepers prefer closed-canopy forests with dead trees for nesting and live trees for foraging. They nest in moist, mature forests, usually near water. Nests are placed between loose slabs of bark and the tree trunk. The biology and

ecology of the species is poorly known and population trends are difficult to reliably assess due to low breeding densities. Loss of large live trees, dead trees, and old-growth forests negatively affect Brown Creeper populations (Hejl et al. 2002).

**Illinois History**

Although a common migrant and winter resident, the Brown Creeper only occasionally breeds in the state (Bohlen 1989). Records of breeding prior to the mid-1900s are scarce. The Brown Creeper was not reported as a breeding species by nineteenth and early twentieth century authors (Cooke 1888; Ridgway 1889; Cory 1909; Smith and Parmalee 1955; Ford 1956) except for the record of nesting by Kennicott (1855) in Cook County. This species was reported in August 1907 near Olive Branch in Alexander County by Ferry (1907) but was not noted in the summer again until the mid-1960s. The first confirmed nest was recorded in 1966 (Greer 1966) and since then the species has been found during the summer months at several locations, some with evidence of nesting. Because of its past history, limited distribution, and small population size, the Brown Creeper was initially listed as an endangered species in Illinois but was upgraded to threatened status in 1989. The current breeding population is small and localized, but this may have always been the case (Bohlen 1989).

**Breeding Bird Survey Trends**

Because Brown Creepers are not adequately sampled by the BBS, there are insufficient data to estimate Illinois trends. The trend estimate for the upper Midwest is 4.2% per year (nonsignificant,  $P = 0.12$ ) for 1966–2000.

*Credibility Index:* IL = none and UM = 3.

**Distribution**

In Illinois the Brown Creeper habitat is limited to the cypress and tupelo swamps of southern Illinois and floodplain forests in the rest of the state. During the atlas project, Brown Creepers were found infrequently and at scattered locations across the state. Because of its secretive behavior and cryptic plumage, this species may have been missed and therefore may be underrepresented. It is known to occur in several of the cypress/tupelo swamps of southern Illinois and in the floodplain forests of the Mississippi, Illinois, Kankakee, and Sangamon river systems, as well as other sites.

**Frequency**

The Brown Creeper was reported from 15 (1.5%) priority blocks and 7 nonpriority blocks. It was Confirmed as breeding in one of the priority blocks (in Adams County) and 2 nonpriority blocks. Brown Creepers are extremely difficult to detect and even more difficult to confirm as a breeding species.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	6.7	3	0.2
Probable	5	0.5	33.3	8	0.6
Possible	9	0.9	60.0	11	0.9
Totals	15	1.5	100.0	22	1.7

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	▨	●
Possible	□	○



**Brown Creeper**



Dennis Oehmke

**Code:** CARW

**Rangewide Distribution:** eastern U.S. and eastern Mexico.

## ILLINOIS

**Abundance:** common permanent resident in south, decreasing northward.

**Endangered/Threatened Status:** none

**Breeding Habitat:** open deciduous woodlands especially with brushy cover, farmland and parks with dense undergrowth.

**Nest:** a cavity with twigs, bark strips, leaves, and grass lined with finer materials.

**Eggs:** 5, white, often pinkish or creamy, usually heavily flecked with browns or purples; often wreathed.

**Incubation:** 12–14 days.

**Fledging:** from 12 to 14 days.

The Carolina Wren is a year-round resident in much of the eastern half of the U.S., where it is most common in the South, and in eastern Mexico. This species is noted for its loud and clear voice and extensive repertoire of songs and calls that can be heard at great distances. Carolina Wrens inhabit moderate to dense brushy cover, including the understory of upland and bottomland forests, woodlots, and residential areas with shrubs. According to early accounts, it was “rarely found about dwellings and seldom if ever fixes his habitation in close proximity to the abodes of man” (Ridgway 1889). It now regularly associates with human habitation where it can be found nesting in shoes, flowerpots, garages, and barns, in addition to natural situations such as tree cavities, brush piles, and crotches of trees. It is a prolific breeder, producing two or three clutches per year. The range of the Carolina Wren has expanded northward throughout the 1900s, perhaps in response to weather, reforestation, and

supplemental food supplied by bird feeders in the winter (Haggerty and Morton 1995). Although northern Carolina Wren populations decline dramatically during severe winters, they often recover within a few years (Haggerty and Morton 1995).

## Illinois History

The Carolina Wren, which is the largest of the five wren species that breed in Illinois, was considered abundant in southern Illinois and uncommon in the northern part of the state during the late 1800s and early 1900s (Cory 1909). Weather plays an important role in the status of Carolina Wren populations in the state. In recent times notable population declines occurred during the severe winters of 1966–1970 and 1977–1978; however, the population recovered after these periods.

## Breeding Bird Survey Trends

BBS data for the Carolina Wren population in Illinois indicate a 5.1% per year (significant,  $P < 0.01$ ) increase from 1966 to 2000. The population in Illinois declined at an annual rate of –14.0% (significant,  $P < 0.01$ ) from 1966 to 1979 due to a series of severe winters, but increased by 7.7% per year (significant,  $P < 0.01$ ) from 1980 to 2000. Trend estimates for the upper Midwest follow a similar pattern, with a significant ( $P < 0.01$ ) increase of 3.2% per year for 1966–2000, a significant decline in the first half of the 35-year sample period, and a significant increase in the second half.

**Credibility Index:**  $IL = 2$  and  $UM = 2$ .

## Distribution

The Carolina Wren has always been more common and widespread in southern Illinois than northern Illinois and the atlas project data confirmed that this distribution pattern still holds true. The range of this species has been expanding northward up the river valleys, but it is still sparsely distributed in the northern half of the state. It was reported in priority blocks in 90 counties.

## Frequency

The Carolina Wren was reported from 534 (53.5%) priority blocks and 40 nonpriority blocks. Breeding was Confirmed in 193 (19.4%) of the priority blocks, most frequently by observations of fledged young (76 FL records), adults feeding young (56 FY records), or nest with young (30 NY records). Because of their loud, ringing voices, Carolina Wrens were likely detected in most blocks where they were present. Because they establish permanent territories which they defend year-round, they probably nested in most of the blocks in which they were found.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	193	19.3	36.1	210	16.3
Probable	177	17.7	33.1	194	15.1
Possible	164	16.4	30.7	170	13.2
Totals	534	53.5	100.0	574	44.6

\* 998 priority blocks

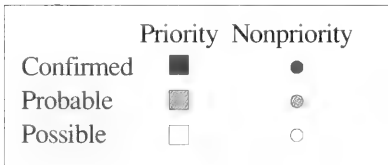
\*\* 1,286 total blocks (priority and nonpriority)



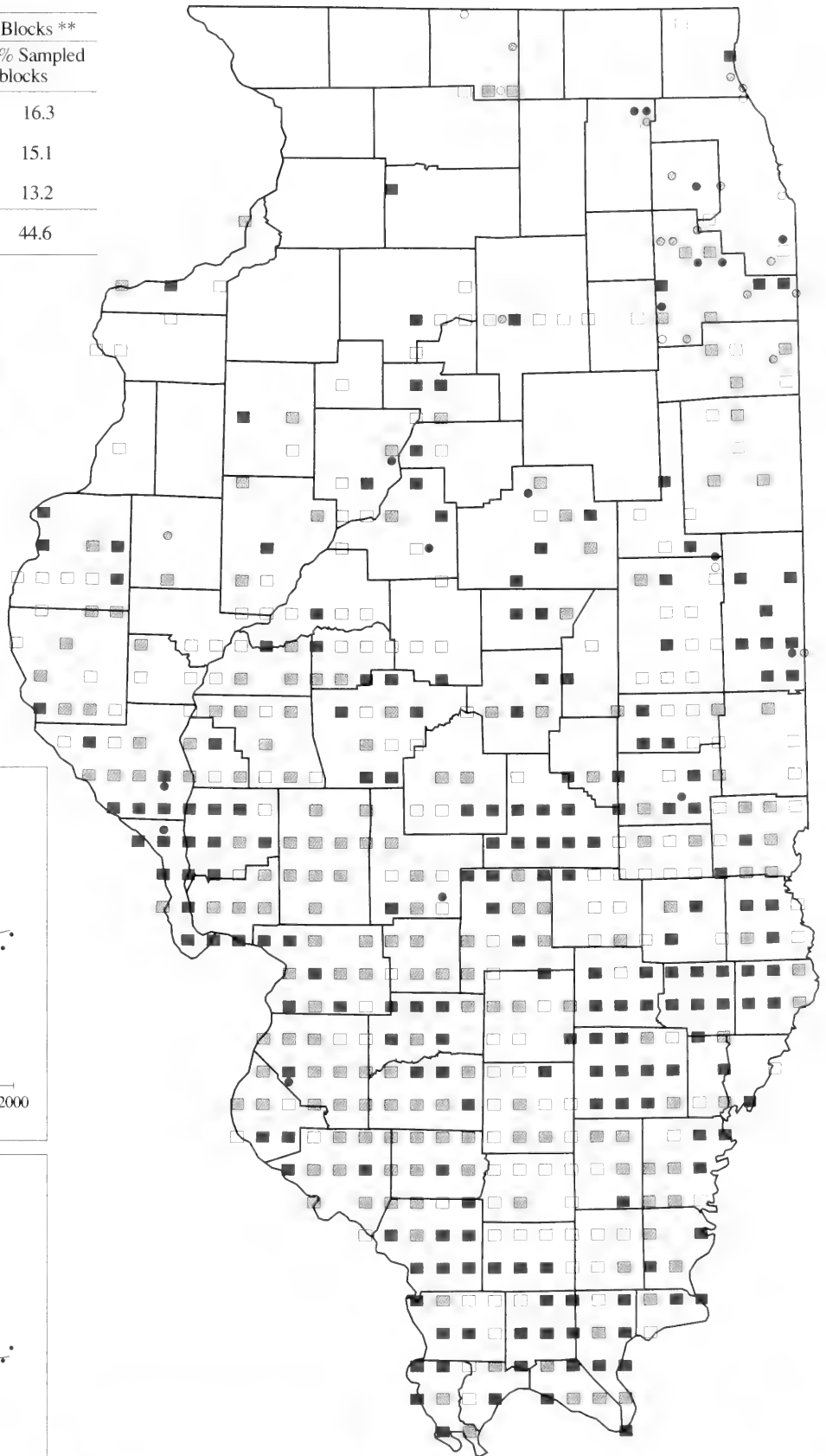
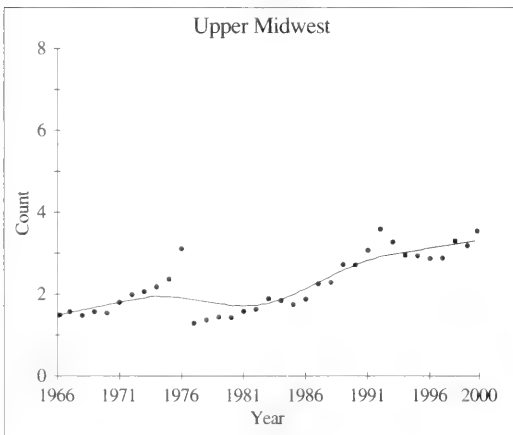
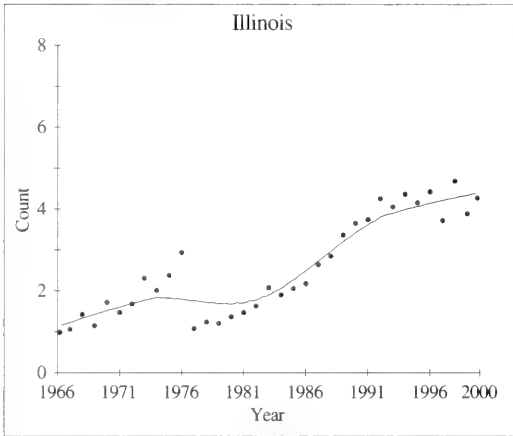
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Carolina Wren**



Robert Randall

**Code: BEWR**

**Rangewide Distribution:** southern U.S. from western Tennessee to California and the west coast states, south through Mexico.

**ILLINOIS**

**Abundance:** very rare migrant, summer and winter resident

**Endangered/Threatened Status:** endangered

**Breeding Habitat:** open woodlands, shrublands, farms, and residential areas near woodlands.

**Nest:** a cavity including twigs and grasses lined with finer materials.

**Eggs:** 5–7, white, flecked with browns and purples, occasionally wreathed.

**Incubation:** 12–14 days.

**Fledging:** 14 days.

The active and noisy Bewick's Wren primarily breeds in the south-central and southwest U.S., the west coast states, and Mexico; it is rare in eastern North America. It occurs in a variety of brushy areas in open or semi-open woodlands, woodland edges, thickets, near outbuildings in rural areas, and occasionally in towns. These wrens typically nest in natural cavities but also utilize a nook or cranny in buildings, machinery, or woodpiles. The white-edged tail, which is often flicked side-to-side, and its Song Sparrow-like song help to distinguish the Bewick's Wren from the similar Carolina Wren. It feeds on insects gleaned from leaves, branches, and trunks in the lower strata. Bewick's Wrens have virtually disappeared east of the Mississippi River and

have declined in the West (Kennedy and White 1997). Suspected reasons for the decline are competition for nesting sites with House Sparrows, Song Sparrows, European Starlings, and especially the House Wren, whose range expansion coincided with the decline in the Bewick's Wren population (Kennedy and White 1996).

**Illinois History**

During the late 1800s and early 1900s, the Bewick's Wren was a common breeding species in southern Illinois (Ridgway 1889), present but less common in central Illinois, and a straggler in northern Illinois (Cory 1909). At one time it was so common in southern Illinois that Ridgway (1889) noted that a pair took up residency at practically every home with outbuildings. By the 1950s its status had already changed from abundant or common to uncommon even in the heart of its breeding range (Smith and Parmalee 1955). It was still fairly common in Pulaski County during the early 1960s (D. Davis, pers. comm.). By the 1970s the decline in population was so drastic that the Bewick's Wren was declared a threatened species in 1977 and changed to an endangered species in 1989.

**Breeding Bird Survey Trends**

In Illinois the Bewick's Wren was found on few routes and in such low numbers that confidence in the trend estimate for 1966–2000 of –13.9% per year (nonsignificant,  $P = 0.17$ ) is low. In the upper Midwest, the trend estimate is –2.8% per year (nonsignificant,  $P = 0.32$ ) for 1966–2000.

**Credibility Index:**  $IL = 3$  and  $UM = 2$ .

**Distribution**

Once a common species in thickets near farms and woodlands in southern Illinois, the Bewick's Wren is now so rare it does not have a discernable distribution pattern. This species was reported from many more atlas blocks (410, or 34%) in Missouri during its atlas project, especially in the central and south-central portions of the state, but that population was also experiencing a rapid decline (Jacobs and Wilson 1997).

**Frequency**

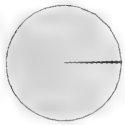
The Bewick's Wren was reported from four (0.4%) priority blocks and one nonpriority block. Breeding was Confirmed in three of the priority blocks and in the nonpriority block. Bewick's Wrens are easy to detect because of their loud songs and activity around their nesting sites.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	3	0.3	75.0	4	0.3
Probable	1	0.1	25.0	1	0.1
Possible	0	0.0	0.0	0	0.0
Totals	4	0.4	100.0	5	0.4

\* 998 priority blocks

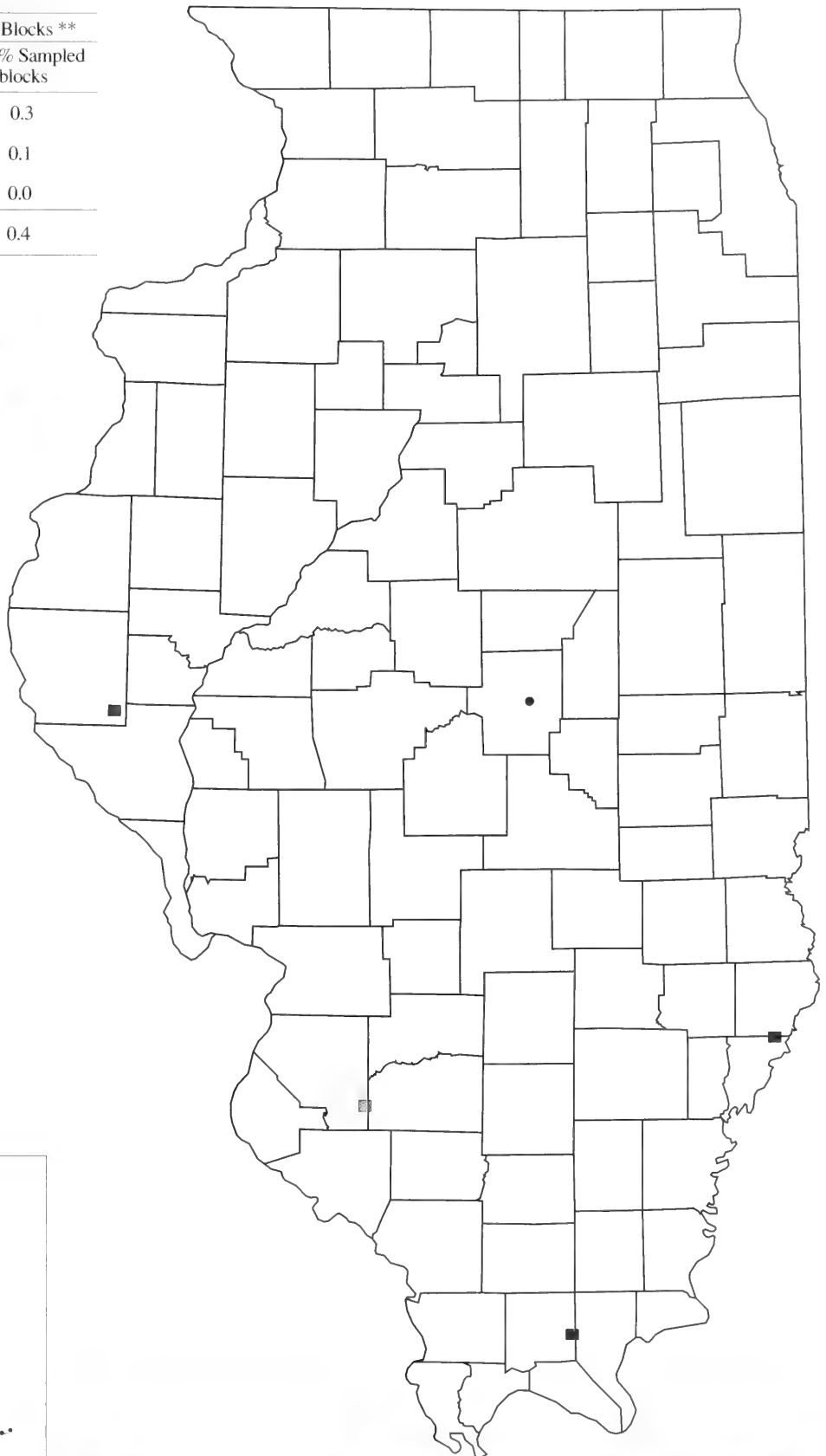
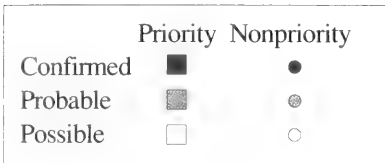
\*\* 1,286 total blocks (priority and nonpriority)



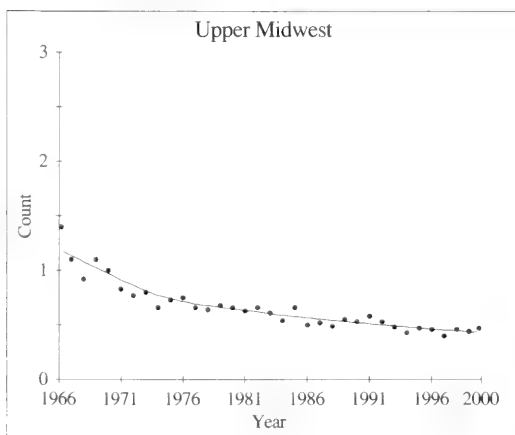
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Bewick's Wren**





Richard Day / Daybreak Imagery

**Code:** HOWR

**Rangewide Distribution:** southern Canada and most of the U.S., to southern South America.

**ILLINOIS**

**Abundance:** common migrant and common summer resident (except in south), occasional winter resident (mainly in the south).

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open woodlands, shrublands, farmlands, and suburban areas.

**Nest:** in a cavity, made of twigs and grass lined with finer materials; readily accepts nest boxes.

**Eggs:** 6–8, white, marked with browns; occasionally wreathed.

**Incubation:** 13 days.

**Fledging:** from 12 to 18 days.

The House Wren breeds from southern Canada to southern South America, which is one of the most extensive latitudinal breeding ranges among native passerine species in the New World (Johnson 1998). The “jenny” wren is a common and familiar bird whose bubbling songs and scolding chatter can be heard throughout the U.S. and southern Canada in the summer. House Wrens inhabit a variety of open and semi-open shrubby areas, including woodlands, forest edges, and residential areas with trees. They generally avoid large forested blocks but do utilize forest openings (Robbins et al. 1989). They are cavity nesters that use natural cavities or woodpecker holes in woodlands but are readily attracted to nest boxes in residential areas. The male wrens have an unusual behavior of creating dummy nests by filling several

cavities in their territory with twigs. The female then selects the nesting site, removes the twigs from the cavity, and builds a nest to her satisfaction. The House Wren is an aggressive defender of its territory and is known to puncture other birds’ eggs and destroy their nests when they attempt to nest in the wren’s territories (Sealy 1994). The House Wren’s diet consists of insects and other invertebrates gleaned from vegetation. In North America, the House Wren population expanded southward as the forests were cleared for agriculture and human settlements became established (Johnson 1998). In recent decades House Wren populations in North America have increased, according to Breeding Bird Survey data.

**Illinois History**

Cory (1909) reported that the House Wren was “a not uncommon summer resident in Illinois” and Ridgway (1889) considered it “very rare in many parts of southern Illinois.” Both accounts still apply, although the House Wren’s range has gradually extended to include more of southern Illinois. The House Wren population has not been adequately monitored in Illinois except for the Breeding Bird Survey.

**Breeding Bird Survey Trends**

The House Wren population has increased in Illinois and the upper Midwest from 1966 to 2000. BBS data indicate an annual increase of 1.6% (significant,  $P = 0.02$ ) for Illinois and 1.2% (significant,  $P < 0.01$ ) for the upper Midwest.

*Credibility Index:* IL = 1 and UM = 1.

**Distribution**

The House Wren is a widespread species throughout the state except in the extreme southern tip. It was reported in priority blocks in 101 counties and breeding was Confirmed in 96 of them. While still uncommon in southern Illinois, it is now more common there than just a few years ago. During the atlas project, the House Wren was among the most frequently reported and widely distributed species in priority blocks.

**Frequency**

The House Wren was reported from 891 (89.3%) priority blocks and 162 nonpriority blocks. Breeding was Confirmed in 594 (59.5%) of the priority blocks. The House Wren was easily detected by its familiar and persistent singing. The most frequently used breeding evidence criteria for Confirmed records in priority blocks were occupied nest (207 ON records) and adults feeding young (146 FY records), followed by fledged young (95 FL records) and nest with young (95 NY records). It is likely that nesting occurred in most blocks in which this species was reported.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	594	59.5	66.7	706	54.9
Probable	188	18.8	21.1	224	17.4
Possible	109	10.9	12.2	123	9.6
Totals	891	89.3	100.0	1,053	81.9

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



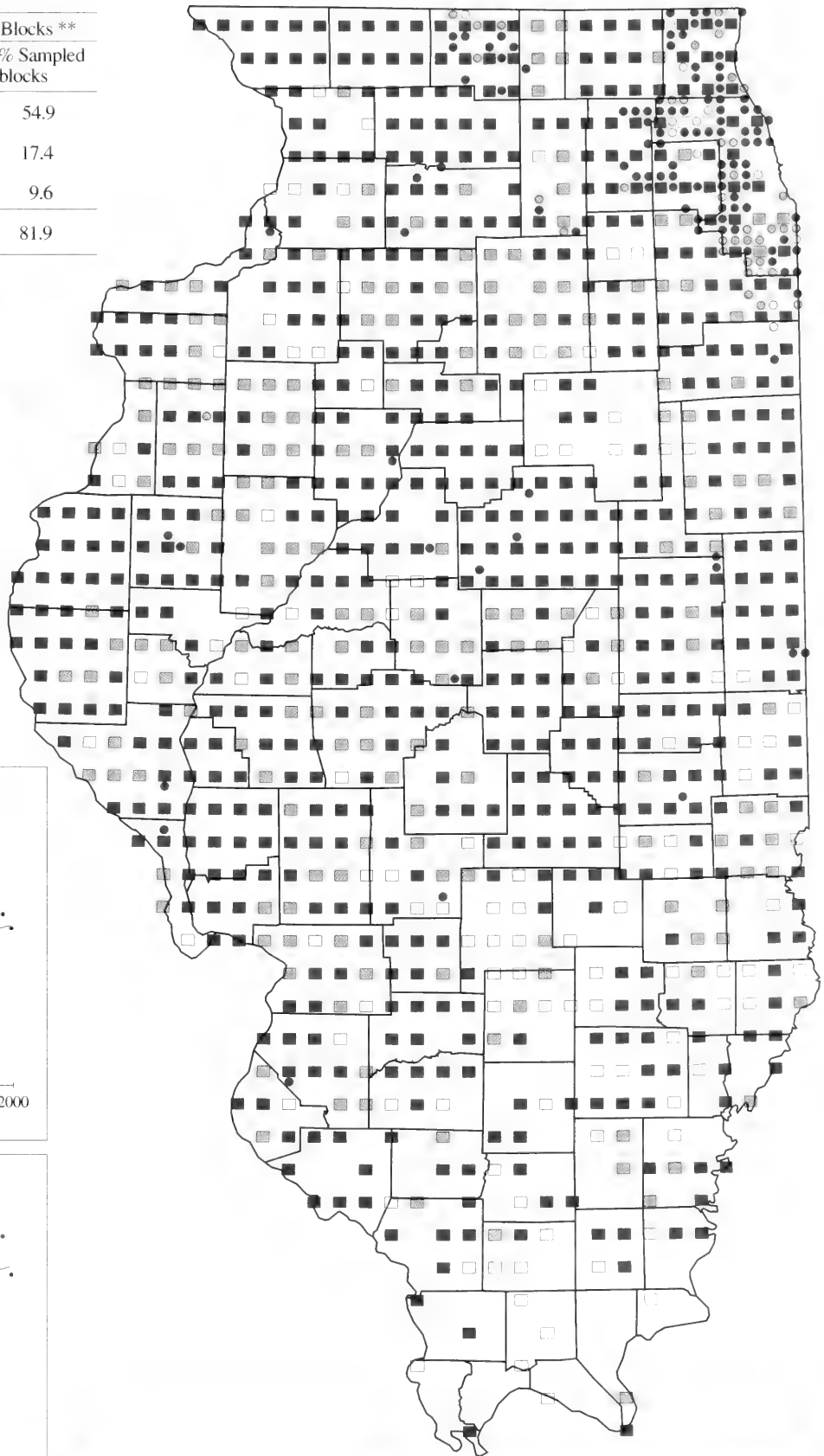
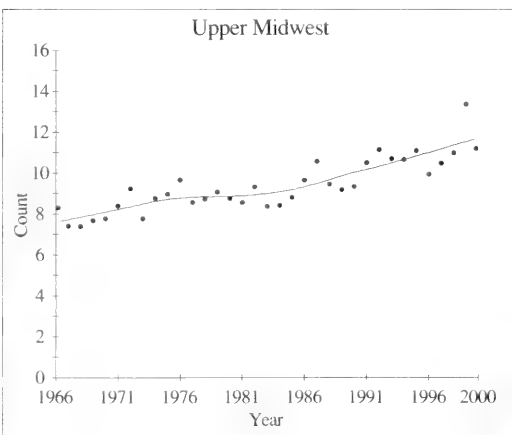
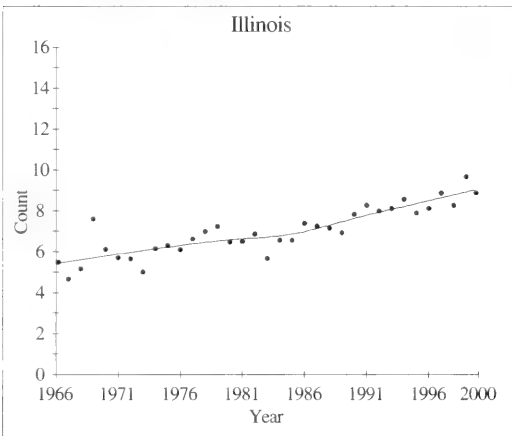
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○

## Breeding Bird Survey Trends



**House Wren**



Robert Randall

**Code: SEWR**

**Rangewide Distribution:** south-central Canada and eastern U.S., to southern South America.

**ILLINOIS**

**Abundance:** uncommon migrant and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** wet meadows, drier marshes, and weedy fields.

**Nest:** sphere of dry and green grasses interwoven with growing grass lined with finer materials; hidden entrance on side.

**Eggs:** 7, white, unmarked.

**Incubation:** 12–16 days.

**Fledging:** from 12 to 14 days.

The Sedge Wren has traditionally inhabited wet meadows and vegetation along the margins of marshes and ponds, but with the decline in availability of these habitats these birds have accepted hayfields, brushy fields, and overgrown pastures with an abundance of thick cover as a substitute. Its breeding range is mainly the eastern half of the U.S. north of the Ohio River to southern Canada. Sedge Wrens are opportunistic and erratic nesters (Jackson et al. 1996). They have two periods of breeding (May–June and July–September) and may move to widely different locations to breed later in the year (Herkert et al. 2001). Nests are well-concealed in dense grasses and sedges in wet prairies or

meadows where the ground is saturated or the water is very shallow. They often build dummy nests to confuse potential predators. The loss and degradation of shallow wetlands and prairies to agriculture has undoubtedly resulted in a decline in the population in the last century (Herkert et al. 2001). Sedge Wren populations may benefit from the creation of new grassland habitat such as that created by the Conservation Reserve Program (Herkert et al. 2001). This program encourages farmers to retire crop fields that are subject to excessive soil erosion and plant them in permanent cover, with an emphasis on grasses.

**Illinois History**

During the mid-1800s, the Sedge Wren was a “common summer resident and generally distributed in suitable places” (Nelson 1876). The status remained unchanged through the early 1900s (Cory 1909). However, with the widespread disappearance of wetlands and native grasslands in Illinois, the population has certainly declined in the past century.

**Breeding Bird Survey Trends**

Sedge Wrens are found in low numbers in the state. The trend is estimated at 2.3% per year (nonsignificant,  $P = 0.67$ ) for 1966–2000 in Illinois. In the upper Midwest the population increased at 1.8% per year (significant,  $P = 0.02$ ) from 1966 to 2000.

*Credibility Index:*  $IL = 3$  and  $UM = 1$ .

**Distribution**

During the atlas project Sedge Wrens occurred in five loose clusters in the northeastern, northwestern, western, east-central, and southeastern parts of the state. The distribution of the Sedge Wren is probably greater than the atlas data indicate. Although birds arrive in late April and early May, many do not begin their breeding cycle until July and August, which is after most atlasers had completed surveying their blocks.

**Frequency**

The Sedge Wren was reported from 68 (6.8%) priority blocks and 46 nonpriority blocks. Breeding was Confirmed in 9 of the priority blocks, 6 of which were confirmed by observation of feeding of young. The species is detected primarily by its song and maintenance of territories because nests and other evidence of breeding are difficult to find.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	9	0.9	13.2	15	1.2
Probable	34	3.4	50.0	62	4.8
Possible	25	2.5	36.8	37	2.9
Totals	68	6.8	100.0	114	8.9

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

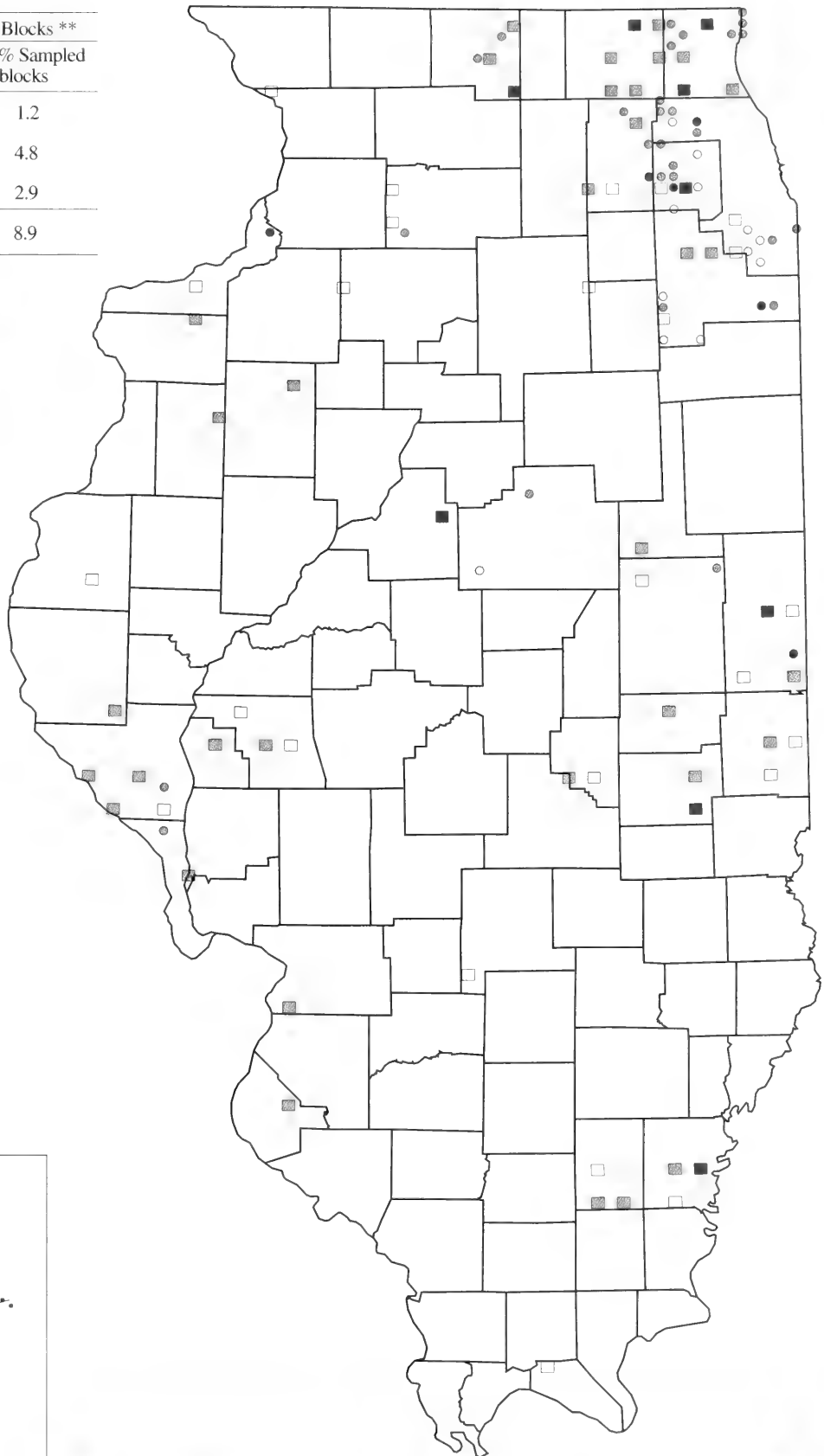


% of 998 sampled priority blocks (gray = no records for this species)

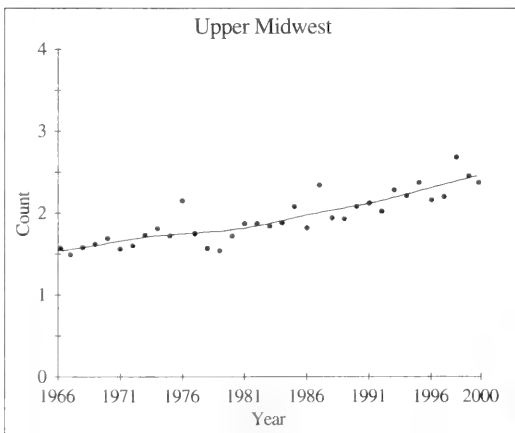


% of priority blocks with records for this species

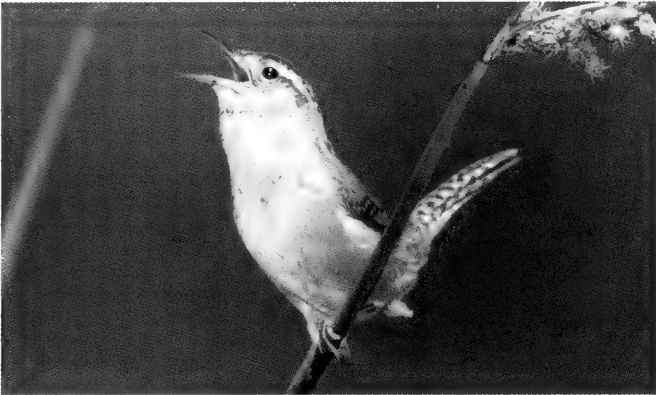
	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Sedge Wren**



*D. Robert Franz / Cornell Lab of Ornithology*

**Code: MAWR**

**Range-wide Distribution:** central and southern Canada to central Mexico.

**ILLINOIS**

**Abundance:** uncommon migrant, uncommon summer resident, and rare winter resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** marshes with heavy stands of reeds or cattails over standing water.

**Nest:** a sphere of reeds and grasses lined with finer materials, attached to reeds with entrance near top.

**Eggs:** 4–6, dull brown, usually marked with darker browns, occasionally wreathed.

**Incubation:** 12–16 days.

**Fledging:** from 13 to 16 days.

During the breeding season, Marsh Wrens inhabit marshes, especially those with dense stands of cattails or sedges. The Marsh Wren is very difficult to observe because it stays well hidden in a habitat that is difficult to penetrate. The best way to detect the presence of a Marsh Wren is by its clattering song. Nests are usually attached to cattails, sedges, or grasses over water. Males are polygamous, simultaneously mating with multiple females, and construct a number of dummy nests in a season. The female may select one of these nests or build one of her own. Like many wren species, Marsh Wrens

destroy nests of other birds by puncturing their eggs, thereby eliminating potential competition. They feed mainly on insects and other invertebrates gleaned in tall marsh vegetation. The breeding range of the Marsh Wren includes much of the northern and western U.S., the coasts of the southeastern U.S., and southwestern Canada. Throughout its range, marsh habitat has greatly declined since Euro-American settlement. Wetland restoration and protection are important for the conservation of this species.

**Illinois History**

The Marsh Wren was described as an “abundant bird in suitable localities” during the late 1800s (Ridgway 1889) and “a common summer resident in . . . at least eastern Illinois” in the early 1900s (Cory 1909). Marsh Wrens are undoubtedly less abundant now than prior to the large-scale loss and modification of wetland habitat in Illinois that began in the mid-1800s.

**Breeding Bird Survey Trends**

As with many wetland-dependent species, the Marsh Wren population is not adequately sampled by the BBS. In Illinois the trend estimate for 1966–2000 is –4.0 % per year (significant,  $P = 0.05$ ), but this species is found on few routes and in low relative abundance. For the upper Midwest the trend estimate is –1.3% per year (nonsignificant,  $P = 0.51$ ) for 1966–2000.

*Credibility Index: IL = 3 and UM = 2.*

**Distribution**

Atlas records were concentrated in priority blocks in the northeastern part of the state in part because the large marshy areas they require are found there. This species probably occurs in other parts of the state where there is suitable habitat.

**Frequency**

The Marsh Wren was reported from 43 (4.3%) priority blocks and 57 nonpriority blocks. Breeding was Confirmed in 15 (1.5%) of the priority blocks. Because of the difficulty in reaching and thoroughly searching their habitat and because of their late nesting season, Marsh Wrens may have gone undetected. Confirmation of nesting was difficult.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	15	1.5	34.9	32	2.5
Probable	18	1.8	41.9	45	3.5
Possible	10	1.0	23.3	23	1.8
Totals	43	4.3	100.0	100	7.8

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

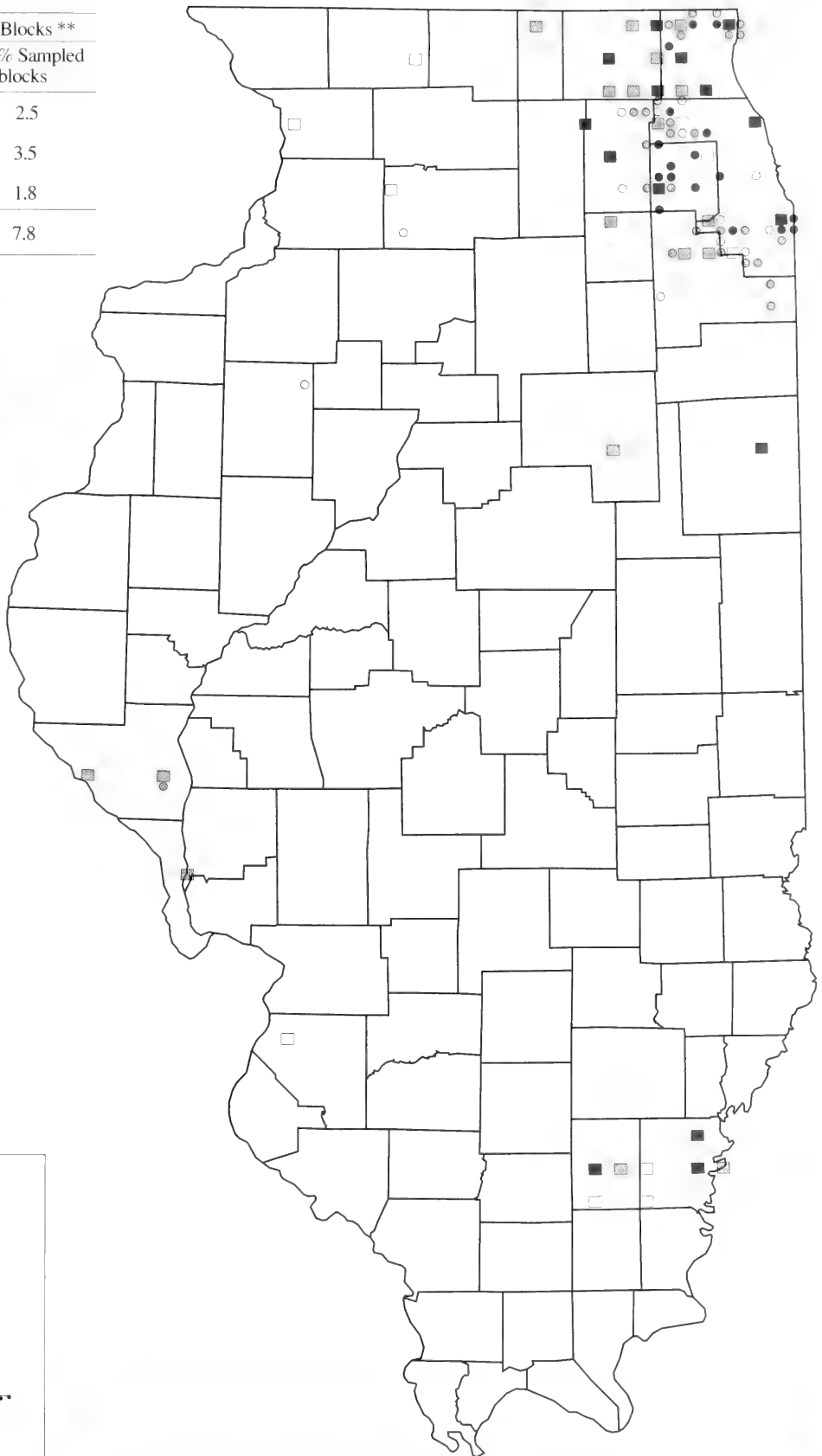


% of 998 sampled priority blocks (gray = no records for this species)

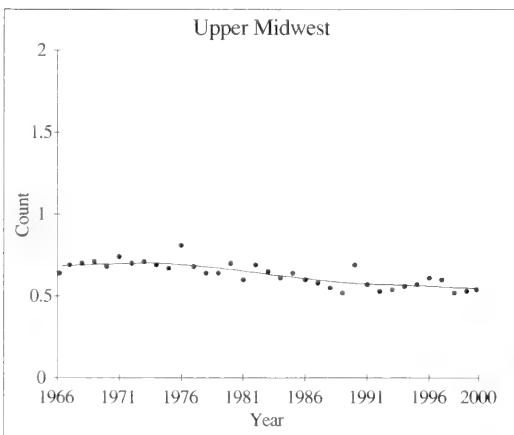


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Marsh Wren**



*Peter Dring*

**Code: GCKI**

**Rangewide Distribution:** southern Alaska and the southern half of Canada, south through all of the U.S. to northeastern Mexico.

**ILLINOIS**

**Abundance:** common migrant and winter resident; very rare summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open coniferous forests.

**Nest:** a pendant of moss, lichens, spider webs, and plant down lined with finer materials; open near the top with an oblong cavity.

**Eggs:** 8–9, creamy white to muddy cream, variably spotted with browns; usually wreathed.

**Incubation:** 14–15 days.

**Fledging:** from 14 to 19 days.

The Golden-crowned Kinglet is a tiny woodland species that breeds mainly in boreal and subalpine spruce and fir forests in the southern half of Canada and in the western U.S., but its breeding range has expanded southward into mature spruce plantings in the northern and eastern parts of the U.S. (Ingold and Galati 1997). It nests mainly in mature conifer-

ous forests and edges of clearings, usually high in conifer trees where nests are well protected by overhanging foliage. In winter these kinglets are often seen in small flocks with chickadees, creepers, nuthatches, and warblers. The Golden-crowned Kinglet eats mostly insects and spiders gleaned from conifers. Extremely cold or snowy winters cause mortality and result in population declines.

**Illinois History**

The Golden-crowned Kinglet was and is known in Illinois as a common migrant and winter resident. In the late 1800s, a few were thought to occur all summer in the dense swamps near Polo (Ogle County) even though nests were never located (Cooke 1888). In 1988 the first recorded nest in Illinois was found at the Morton Arboretum in DuPage County (Walters and Brown 1989). A second nesting attempt occurred there in 1989 (Kleen 1990) but there are no subsequent reports.

**Breeding Bird Survey Trends**

There are no BBS trend estimates for this species in Illinois. The trend estimate for the upper Midwest is 0.8% per year (nonsignificant,  $P = 0.74$ ) for 1966–2000.

*Credibility Index: IL = none and UM = 2.*

**Distribution**

Because coniferous forest habitat is rare in the state, the Golden-crowned Kinglet's breeding distribution in Illinois is very limited and still being determined. Golden-crowned Kinglets breed in Illinois where plantings of coniferous trees (i.e., in arboreta, reforestation projects) have now matured. Morton Arboretum is the only Confirmed site thus far, but nesting may occur at Lowden-Miller State Forest in Ogle County, where a territorial male was reported in 1994 (Kleen 1995).

**Frequency**

The Golden-crowned Kinglet was reported from one (0.1%) priority block, where it was Confirmed, and an adjacent nonpriority block, where it was reported as a Probable breeder.

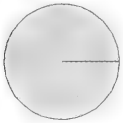


## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	100.0	1	0.1
Probable	0	0.0	0.0	1	0.1
Possible	0	0.0	0.0	0	0.0
Totals	1	0.1	100.0	2	0.2

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

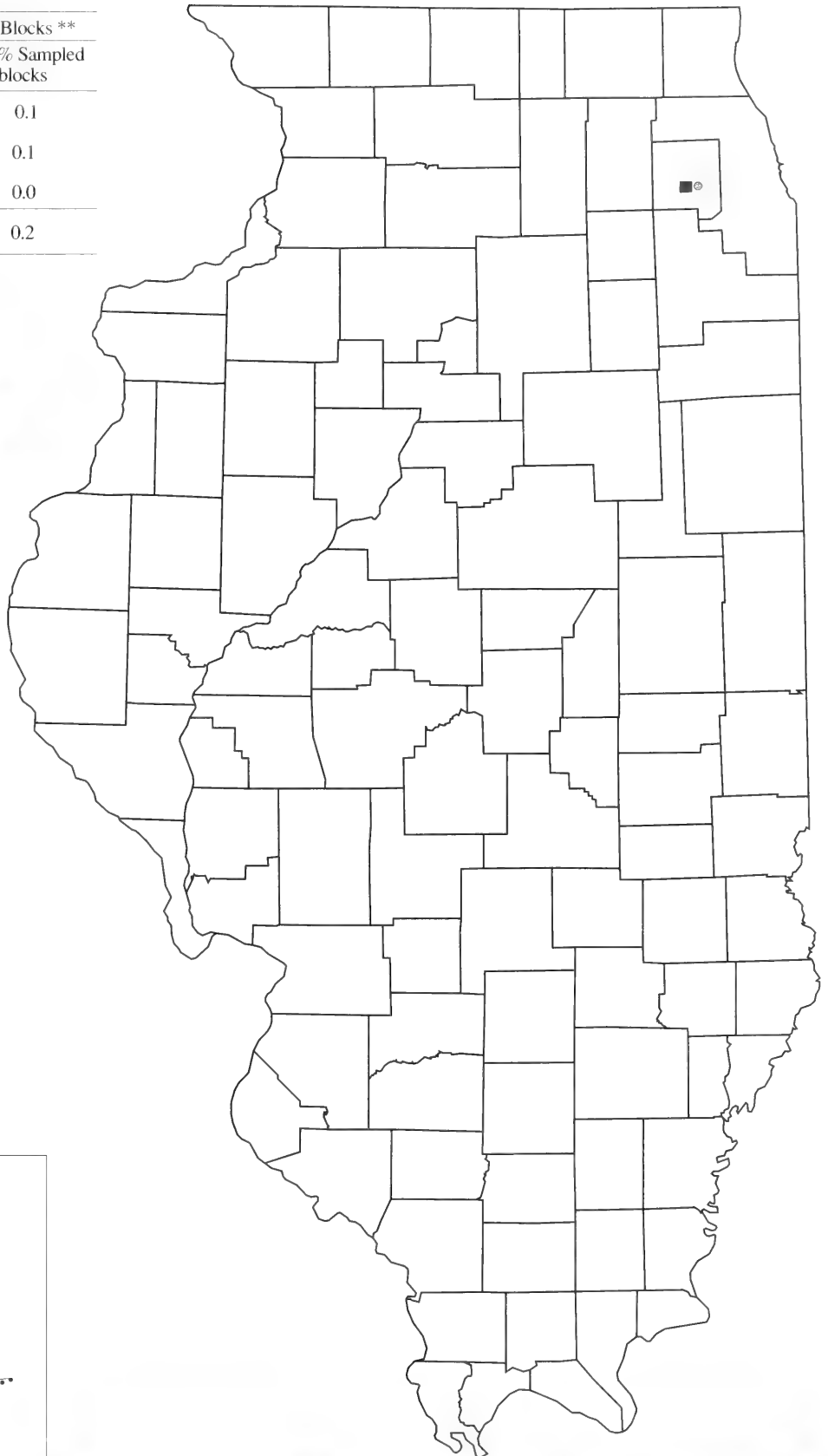


% of 998 sampled priority blocks (gray = no records for this species)

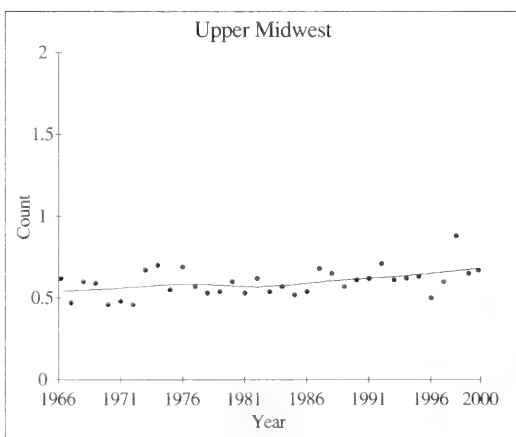


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Golden-crowned Kinglet**



Richard Day / Daybreak Imagery

**Code:** BGGN

**Rangewide Distribution:** eastern and southwestern U.S., to Nicaragua and the West Indies.

**ILLINOIS**

**Abundance:** common migrant and common summer resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** forests, woodlands, shrublands, and swamps.

**Nest:** a cup of plant down and lichens held together with spider silk, covered with lichens, and lined with finer materials, on a horizontal branch of a tree.

**Eggs:** 4–5, pale blue to bluish white, flecked with browns, occasionally wreathed.

**Incubation:** 13 days.

**Fledging:** from 10 to 12 days.

The Blue-gray Gnatcatcher is a small, active bird with a thin wheezy song and chatter. It inhabits a wide range of wooded habitats, preferring bottomland forests or riparian woodlands, and is often found near the forest edge. Gnatcatchers have an early nesting season; they arrive in late March or early April and fledglings often appear before the end of May in Illinois. Nests are usually placed high in a tree on a horizontal branch and are relatively easy to locate. Gnatcatchers may produce two broods per year (Ellison 1992). They are insectivores,

usually gleaning insects from vegetation in the canopy or understory. Its breeding range includes most of the eastern, central, and the southwestern U.S. and Mexico, with the highest densities being found in the southern U.S. during the breeding season (Ellison 1992). Recently its range has expanded northward, particularly into the northeastern U.S. and southeastern Canada (Ellison 1992).

**Illinois History**

A century ago the Blue-gray Gnatcatcher was “not an uncommon summer resident” in Illinois (Cory 1909). More recently, Graber et al. (1979) stated that “Gnatcatcher populations in central and northern Illinois are now generally low” compared to what they were 75 years earlier.

**Breeding Bird Survey Trends**

For 1966–2000, the trend estimate is 1.6% per year (nonsignificant,  $P = 0.43$ ) for Illinois. The trend estimate for the upper Midwest is  $-0.4\%$  (nonsignificant,  $P = 0.71$ ) for the 1966–2000 period.

*Credibility Index:* IL = 2 and UM = 1.

**Distribution**

During the atlas project, the Blue-gray Gnatcatcher was reported in priority blocks in 95 counties. It was most frequently reported from priority blocks in the southern half of the state. Its distribution in the northern part of the state is probably a reflection of the location of the larger forested areas, such as along the major river corridors, in conservation areas, and in forest preserve districts. According to Graber et al. (1979), the gnatcatcher should occupy appropriate habitat in every county.

**Frequency**

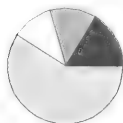
The Blue-gray Gnatcatcher was reported from 408 (40.9%) priority blocks and 56 nonpriority blocks. Breeding was Confirmed in 163 (16.3%) of the priority blocks. Blue-grays were easy to find, often in pairs, by their thin, wheezy calls and their activity. The breeding evidence criteria used most frequently to Confirm breeding in priority blocks were adults feeding young (61 FY records), fledged young (34 FL records), and occupied nest (34 ON records). It is likely that gnatcatchers bred in the majority of blocks in which they were reported.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	163	16.3	40.0	196	15.2
Probable	131	13.1	32.1	146	11.4
Possible	114	11.4	27.9	122	9.5
Totals	408	40.9	100.0	464	36.1

\* 998 priority blocks

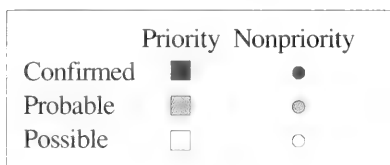
\*\* 1,286 total blocks (priority and nonpriority)



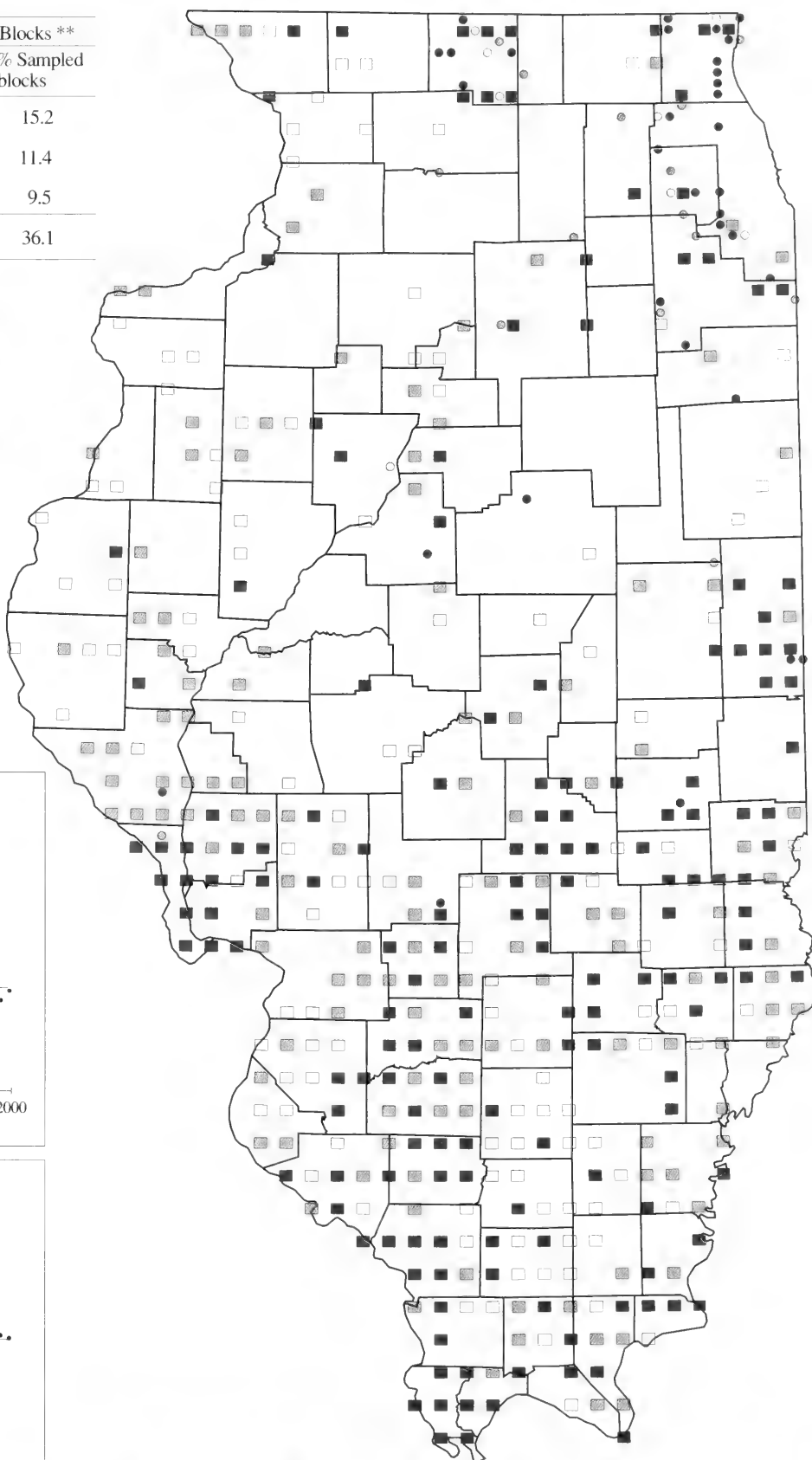
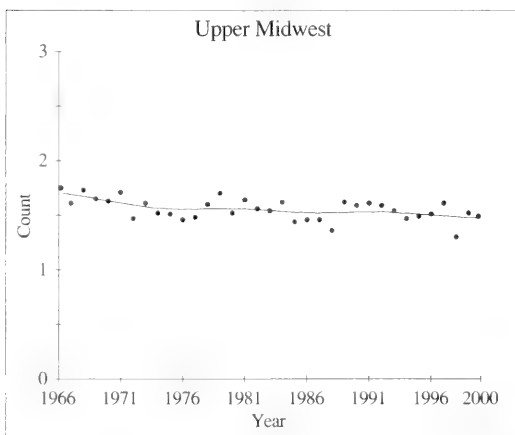
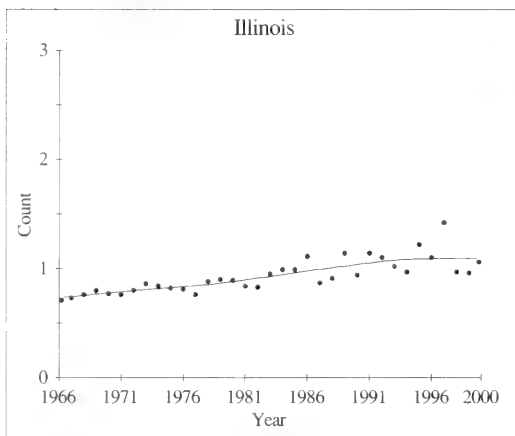
% of 998 sampled priority blocks (gray = no records for this species)



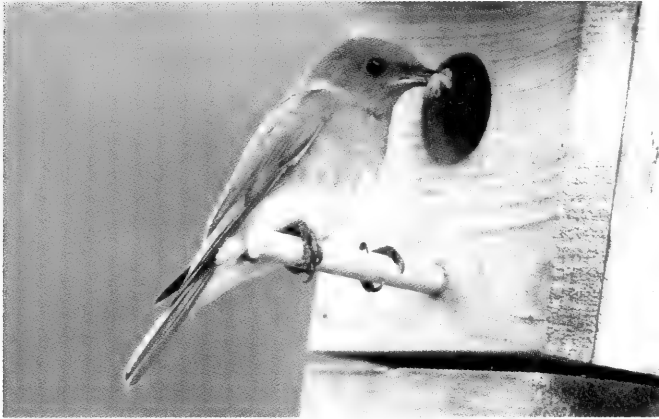
% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Blue-gray Gnatcatcher**



Dennis Oehmke

**Code:** EABL

**Rangewide Distribution:** southeastern Canada, U.S. east of the Rockies, south to Honduras.

**ILLINOIS**

**Abundance:** common migrant and summer resident, uncommon winter resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** forest edge, orchards, pastures, and open country with scattered trees.

**Nest:** a loose cup of twigs, grasses, and weed stems, in a cavity or nest box.

**Eggs:** 4–5, pale blue (sometimes white), unmarked.

**Incubation:** 12–14 days.

**Fledging:** from 15 to 20 days.

The popular and easily recognized Eastern Bluebird breeds in the eastern half of North America from southern Canada to the Gulf coast and in parts of Mexico and Central America. This small thrush is most often found in open and semi-open rural habitats with scattered trees, where it is often seen perching on fences and utility lines. Bluebirds are cavity nesters that utilize natural cavities or woodpecker holes in trees, as well as man-made nest boxes. They compete with House Sparrows, House Wrens, chickadees, starlings, and many other species for nesting cavities. The availability of bluebird nest boxes set up and maintained by bluebird enthusiasts has increased the numbers of this species (Gowaty and Plissner 1998). They forage on the ground in open habitats and their diet consists of mostly insects and small fruits. The conversion of forests to agricultural lands in the 1800s and early 1900s increased the availability of suitable habitat and bluebirds became more abundant during the 1900s (Gowaty and Plissner 1998). In recent decades the

U.S. population has increased, according to Breeding Bird Survey data. During harsh winters and springs, bluebird populations experience crashes, especially in the northern part of its range.

**Illinois History**

The Eastern Bluebird was a very common and well-known species in Illinois, according to early accounts (Ridgway 1889; Cory 1909) and continued as such through the 1950s except for a few winter population crashes. In summer, bluebirds were most abundant in the southern third of the state in the first half of the 1900s (Graber and Graber 1963). The population level in 1957 was half of what it had been in 1909, and after the severe winter of 1958, the bluebird population declined to about one-tenth of its 1909 level (Graber and Graber 1963). In subsequent years the population slowly recovered but setbacks occurred in the late 1970s due to two severe winters (Bohlen 1989; Graber and Graber 1979). Nest boxes are used by a large percentage of bluebirds in the state (Bohlen 1989) and have significantly contributed to the current level of the bluebird population in Illinois.

**Breeding Bird Survey Trends**

BBS trend estimates for the bluebird population indicate increases of 3.8% per year (significant,  $P < 0.01$ ) for the state and 2.9% per year (significant,  $P < 0.01$ ) for the upper Midwest for the 1966–2000 period. In both the state and region, significant population declines during the 1966–1979 period were followed by significant recoveries during 1980–2000.

*Credibility Index:* IL = 2 and UM = 2.

**Distribution**

The Eastern Bluebird was widely distributed throughout the state and reported in priority blocks in all 102 counties. It was reported less frequently from priority blocks in the intensively cropped or developed areas. If nest boxes were available and properly maintained, the Eastern Bluebird would probably occur in nearly every Illinois township, except perhaps the highly urbanized areas.

**Frequency**

The Eastern Bluebird was reported from 756 (75.8%) priority blocks and 86 nonpriority blocks. Breeding was Confirmed in 585 (58.6%) of the priority blocks, with fledged young, adults feeding young, occupied nest, and nest with young (205 FL, 118 FY, 105 ON, and 95 NY records, respectively) the most frequently used breeding evidence criteria. The bluebird was one of the easiest species to find, identify, and confirm.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	585	58.6	77.4	654	50.9
Probable	97	9.7	12.8	103	8.0
Possible	74	7.4	9.8	85	6.6
Totals	756	75.8	100.0	842	65.5

\* 998 priority blocks

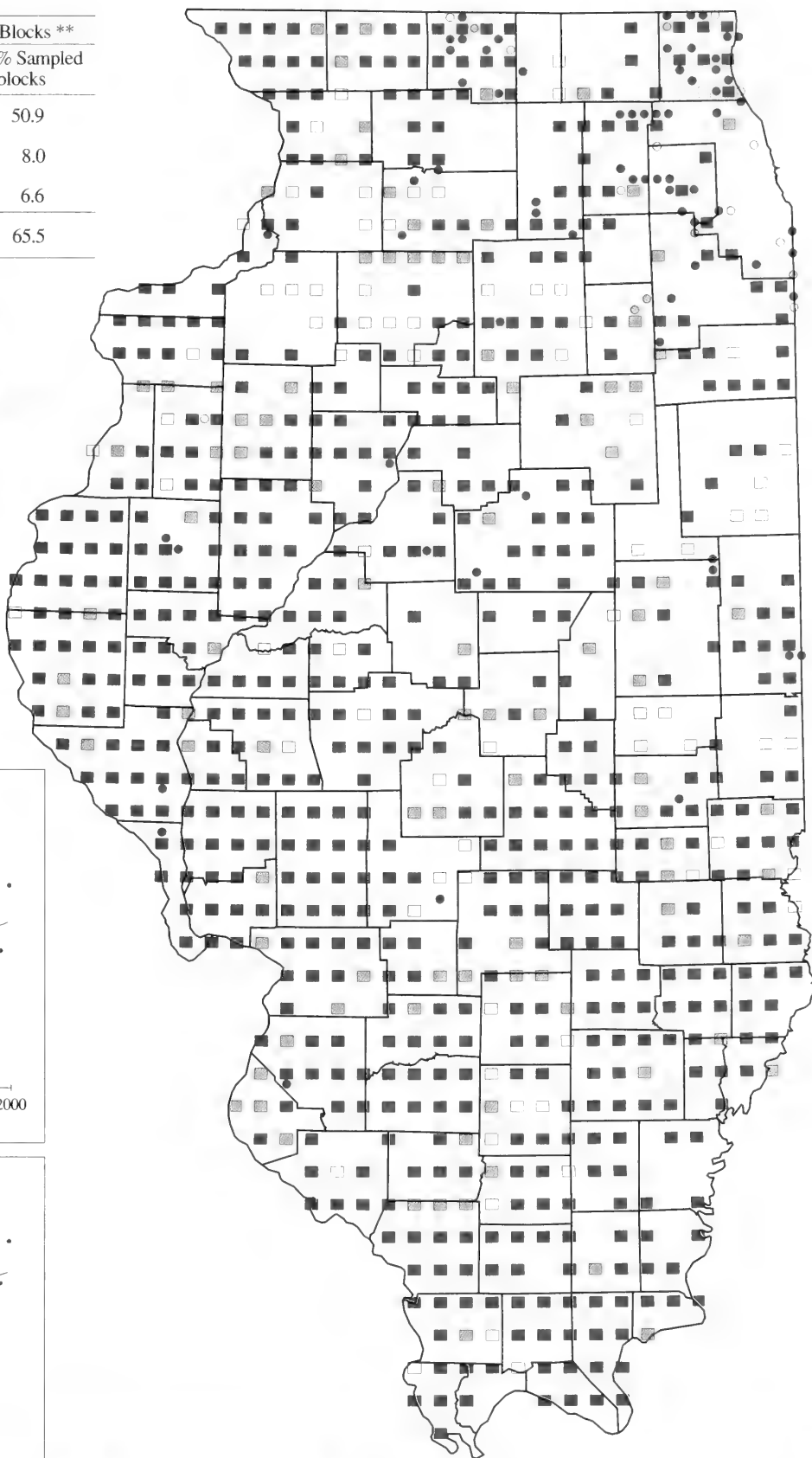
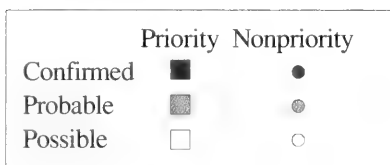
\*\* 1,286 total blocks (priority and nonpriority)



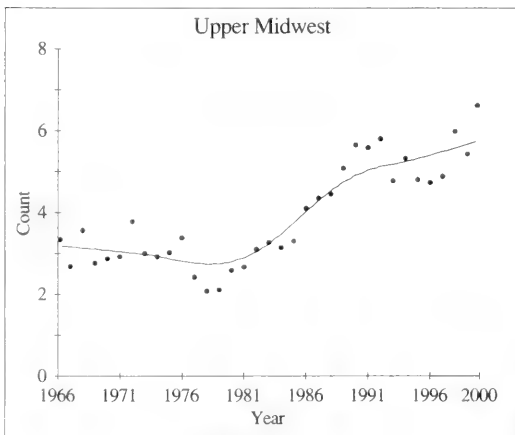
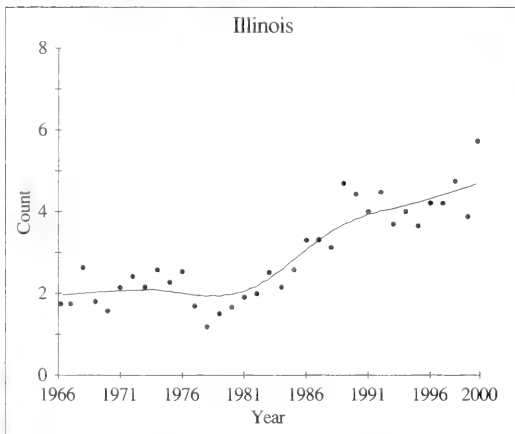
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Eastern Bluebird**



Richard Graber

## Code: VEER

**Rangewide Distribution:** southern Canada, south through the U.S. except the southwest and far west, to northern Brazil.

## ILLINOIS

**Abundance:** fairly common migrant and rare to uncommon summer resident in north, decreasing southward to the central part of the state.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** shaded, moist woodlands with understory.

**Nest:** a cup of twigs, bark strips, grass, and weed stems lined with soft bark and leaves, on or near the ground.

**Eggs:** 4, pale blue, usually unmarked.

**Incubation:** 10–12 days.

**Fledging:** about 10 days.

This woodland species breeds mainly across the northern U.S. and southern Canada. The Veery occurs in moist deciduous forests with dense, herbaceous understories, especially disturbed and early successional forests (Moskoff 1995), and prefer larger forest tracts (Morss 1999). It is most readily recognized by its flute-like song “veer, veer, veer.” Insects and fruit are the main food items and it primarily forages on the ground and to a lesser extent in shrubs and trees. Veeries nest on or near the ground in small shrubs, such as gooseberry, or small trees. Forest fragmentation,

which increases parasitism by Brown-headed Cowbirds, and loss of second-growth woodland habitat are threats to the Veery population. Preservation of large blocks of mesic forests is an important conservation measure for this species.

## Illinois History

The Veery, the least spotted of the spot-breasted brown thrushes that occur in Illinois, is primarily a migrant through Illinois. However, in the past it was considered “a summer resident from northern Illinois northward” (Cory 1909) and an uncommon summer resident in the Chicago region (Ford 1956). According to Bohlen (1989), a “thin and local nesting population is found mostly in northern Illinois, although some appear to be moving into central Illinois.” Because of its tenuous status as a breeding species in Illinois, the Veery was declared a threatened species in 1977. It was delisted in 1999 and is not currently considered a threatened or endangered species in the state, but remains a rare breeding species.

## Breeding Bird Survey Trends

The Veery population in Illinois is too small and localized to be adequately sampled by the BBS. In the upper Midwest BBS data indicate a decline in population at an annual rate of –1.5% (significant,  $P < 0.01$ ) during the 1966–2000 period. *Credibility Index:* IL = none and UM = 2.

## Distribution

Illinois is at the southern edge of the Veery’s breeding range. During the atlas project, it was most frequently encountered in the northern part of the state and not at all in the southern half. The most southerly Confirmed record was from Vermilion County. A relatively large nesting population of this species was found in the 1990s at Lowden-Miller State Forest in Ogle County (S. Bailey, pers. comm.).

## Frequency

The Veery was reported from 24 (2.4%) priority blocks and 38 nonpriority blocks. Breeding was Confirmed in 7 (0.7%) of the priority blocks, with 2 records of fledged young (FY), 2 records of nest building (NB), 1 record of adults feeding young (FY), 1 record of occupied nest (ON), and 1 record of nest with young (NY). Because of its breeding habits and well-hidden nest, evidence for Confirmed status may not have been detected, and therefore it is possible Veeries may have nested in the blocks recorded as Probable and Possible.

## Breeding Evidence

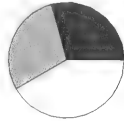
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	7	0.7	29.2	15	1.2
Probable	7	0.7	29.2	26	2.0
Possible	10	1.0	41.7	21	1.6
Totals	24	2.4	100.0	62	4.8

\* 998 priority blocks

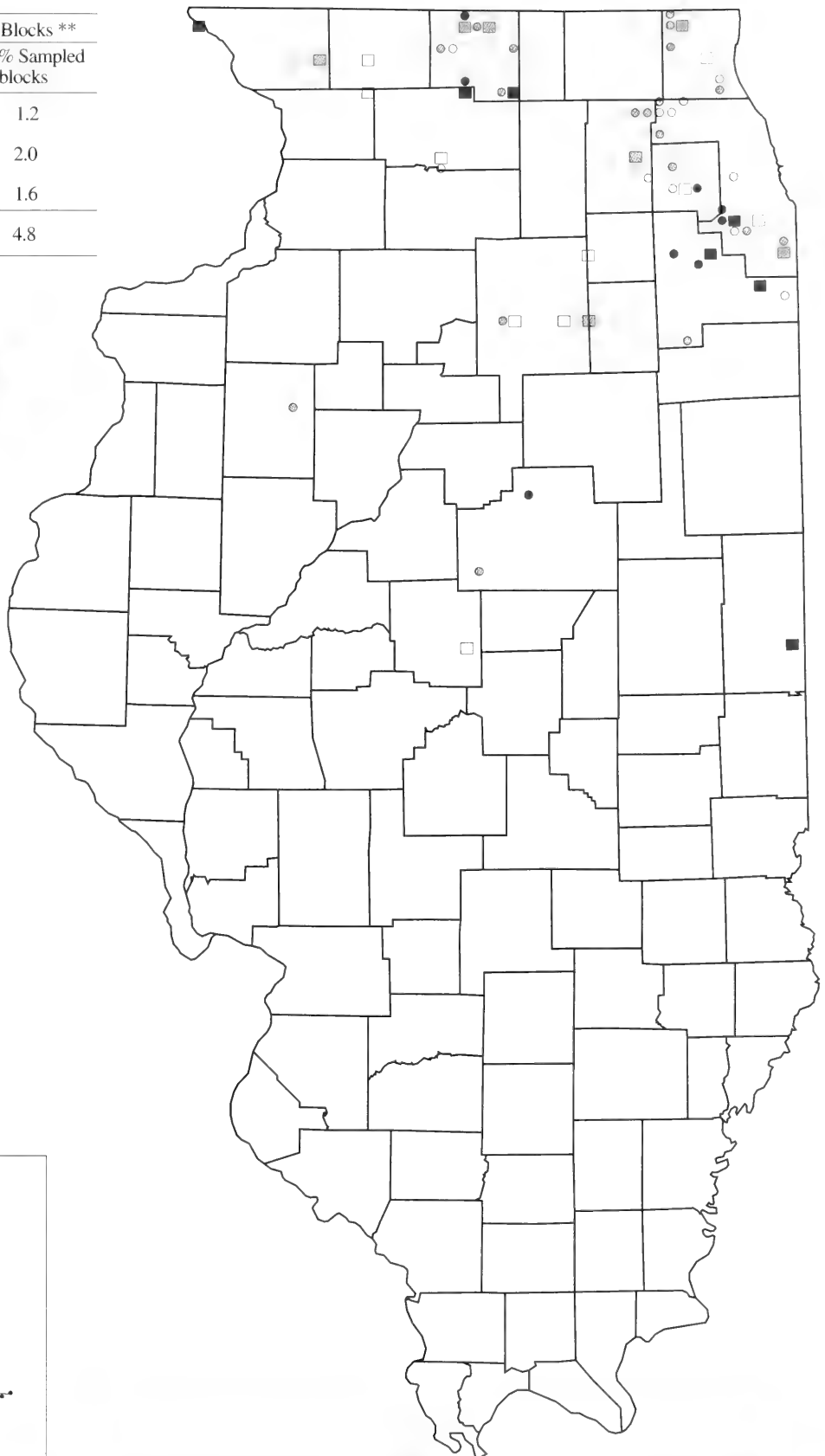
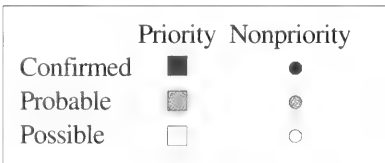
\*\* 1,286 total blocks (priority and nonpriority)



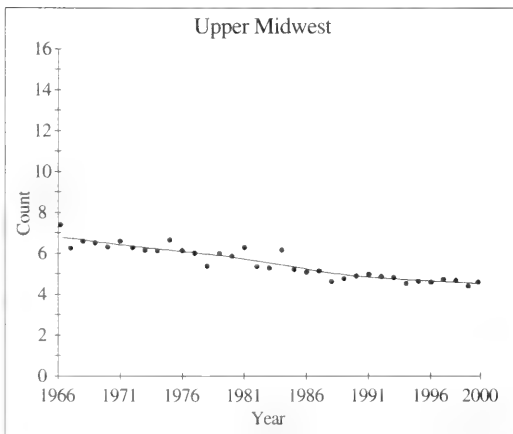
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Veery**





Richard Graber

**Code: WOTH**

**Rangewide Distribution:** far southeastern Canada and the eastern U.S., south along the east coast of Central America to Panama.

**ILLINOIS**

**Abundance:** fairly common migrant and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous forests.

**Nest:** a bulky, compact cup of weed stalks and grass on a base of leaves followed by a layer of mud and lined with fine dark rootlets; in a tree.

**Eggs:** 3–4, greenish blue, unmarked.

**Incubation:** 13–14 days.

**Fledging:** about 12 days.

The Wood Thrush is a familiar species in the forests of the eastern half of North America where it breeds from southern Canada to the Gulf coast. This spot-breasted brown thrush has one of the most melodious songs of North American songbirds. The Wood Thrush is a primary example of a forest interior species. Although it nests in a variety of wooded bottomland habitats, it prefers dense forest interiors, especially forests with well-developed subcanopies and shrub layers and an open forest floor. Wood Thrush nests are placed at low or medium height on horizontal branches of trees. It feeds mostly on invertebrates on the ground and on fruits. As a result of loss and fragmentation of forests along with heavy cowbird parasitism, the Wood Thrush is not

nearly as common as it once was. The Wood Thrush population has declined significantly throughout its range in recent decades, according to Breeding Bird Survey data. Protection and restoration of large, contiguous forest tracts would benefit the Wood Thrush.

**Illinois History**

The Wood Thrush, the largest spotted thrush in Illinois, was a common breeding species throughout Illinois in the 1800s and early 1900s (Ridgway 1889; Cory 1909). Early concerns about the rapid clearing of bottomland forests and its effect on the Wood Thrush population were expressed by Ridgway (1915). The problem was considered even more critical by the 1970s (Graber et al. 1971). Wood Thrush offspring in Illinois rarely fledge from nests any more (Robinson 1992). At present its population is greatly diminished (Robinson et al. 1995).

**Breeding Bird Survey Trends**

The trend estimates for Wood Thrush populations are  $-1.3\%$  per year (nonsignificant,  $P = 0.29$ ) for Illinois and  $-0.1\%$  per year (nonsignificant,  $P = 0.70$ ) for the upper Midwest for 1966–2000.

*Credibility Index: IL = 2 and UM = 1.*

**Distribution**

Atlas data indicate that the Wood Thrush attempted to breed throughout the state but there were relatively few records of successfully fledged young. It was reported in priority blocks in 101 counties, but Confirmed as breeding in only 40 counties. Wood Thrushes were most frequently encountered in, and most likely bred in, the larger and less fragmented forested tracts.

**Frequency**

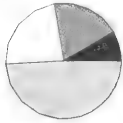
The Wood Thrush was reported from 508 (50.9%) priority blocks and 102 nonpriority blocks. Breeding was Confirmed in 85 (8.5%) of the priority blocks throughout the state. Wood Thrushes were readily detected by the sound of their resonant, flute-like songs but were difficult to confirm as breeding. The confirmation rate was relatively low (85 of 805 priority blocks). This species was most often Confirmed in priority blocks by observation of adults feeding young (25 FY records), nest with eggs (18 NE records), and fledged young (15 FL records). It is likely that Wood Thrushes attempted to breed in most of the blocks in which they were recorded.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	85	8.5	16.7	111	8.6
Probable	190	19.0	37.4	238	18.5
Possible	233	23.3	45.9	261	20.3
Totals	508	50.9	100.0	610	47.4

\* 998 priority blocks

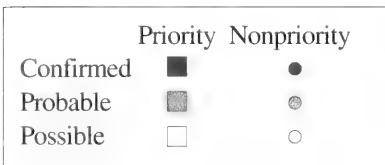
\*\* 1,286 total blocks (priority and nonpriority)



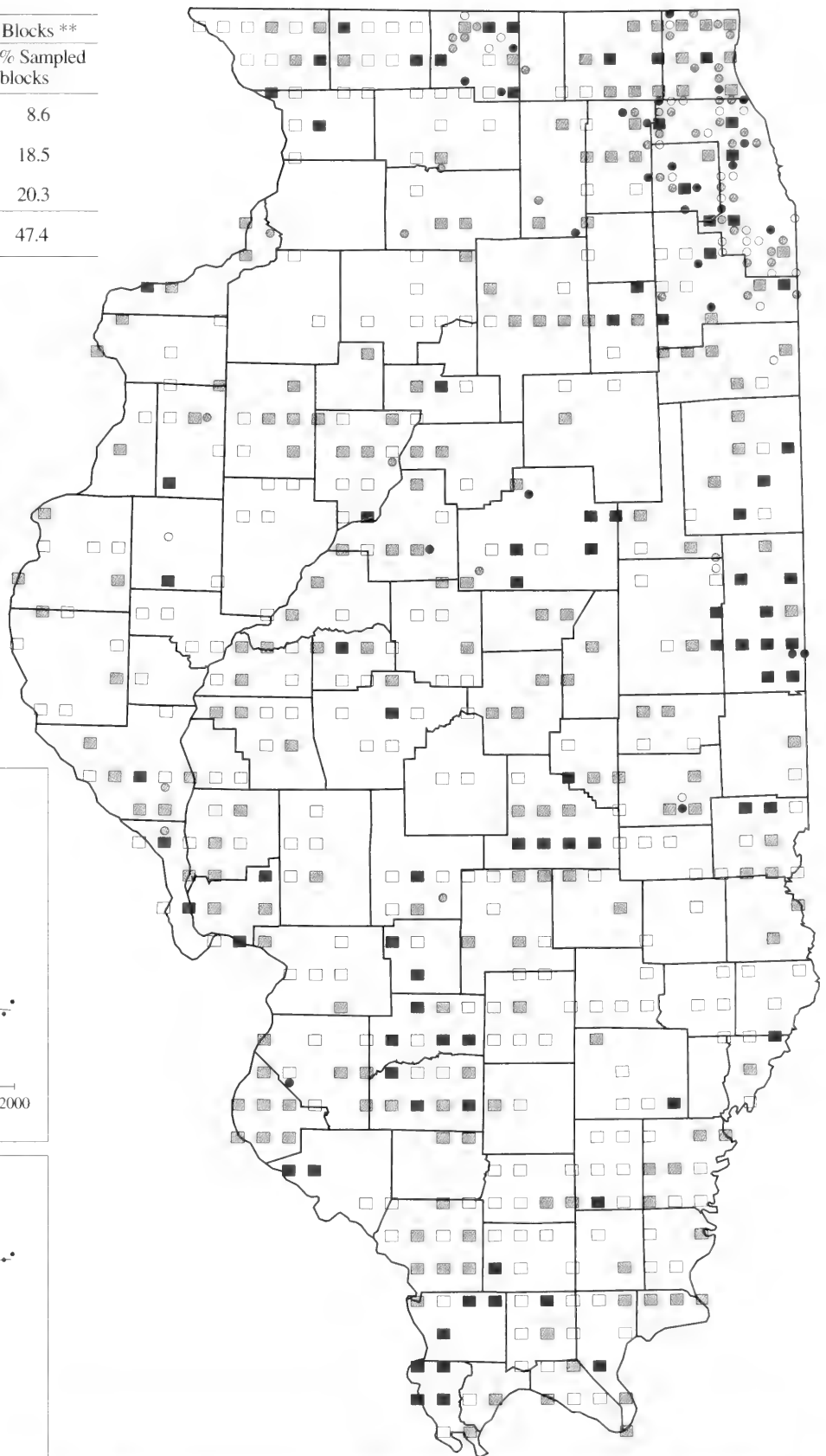
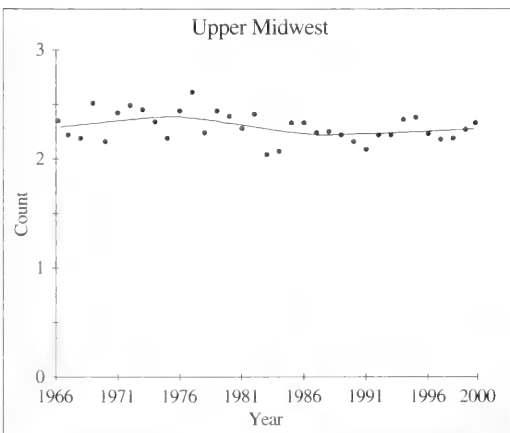
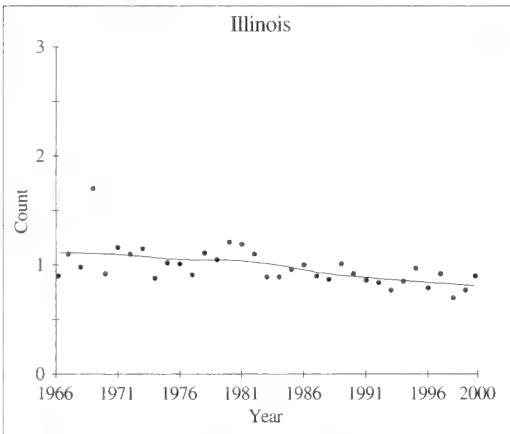
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Wood Thrush**



Richard Day / Daybreak Imagery

**Code: AMRO**

**Rangewide Distribution:** nearly all of North America, from northern Alaska and Canada through Mexico.

**ILLINOIS**

**Abundance:** abundant migrant and summer resident, uncommon winter resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open woods, parks, fields with scattered trees, edges, and residential areas.

**Nest:** a cup of mud with mixed twigs and grass lined with fine grasses, in a tree or on buildings or other structures offering support and protection.

**Eggs:** 4, pale blue, unmarked.

**Incubation:** 12–14 days.

**Fledging:** from 14 to 16 days.

The American Robin, the largest thrush in North America, is one of the most common and familiar birds throughout the continent, where it breeds in nearly all of Canada and the U.S. and in parts of Mexico. It occurs in a wide variety of habitats, including open woodlands, fields, forest edges, parks, and especially residential areas. Like other thrushes, it has a pleasant melodic song. Robins have benefited from habitats created or modified by man, especially short grassy fields and lawns where they forage primarily for invertebrates, especially earthworms in spring and summer; their

diet in autumn and winter also includes fruit. Shade trees and shrubs provide nesting sites, but building ledges and other structures are often used. Robins have reportedly always been abundant in North America. During the 1950s and 1960s, the widespread use of pesticides such as DDT was believed to have caused major die-offs (Hickey and Hunt 1960; Sallabanks and James 1999). Because of their adaptability to a wide range of habitats and tolerance of human alterations to the landscape, robins have benefited from settlement and will probably remain a common species.

**Illinois History**

The American Robin was an abundant summer resident in the late 1800s and early 1900s (Ridgway 1889; Cory 1909). The population was estimated at 1.9 million birds in 1909 and 1.5 million in 1957, with a shift in abundance to residential areas (Graber and Graber 1963).

**Breeding Bird Survey Trends**

BBS data for the robin indicate significant positive trends in both Illinois and the upper Midwest for the period 1966–2000 and for both subinterval periods. The population increased at an annual rate of 2.9% in Illinois (significant,  $P < 0.01$ ) and 1.8% (significant,  $P < 0.01$ ) in the upper Midwest from 1966 to 2000.

*Credibility Index: IL = 1 and UM = 1.*

**Distribution**

During the atlas project, the American Robin was found and Confirmed in nearly every priority block. It was one of the most frequently reported and widely distributed species in priority blocks (Table 4). Robins likely bred in every atlas block in Illinois.

**Frequency**

The American Robin was reported from 990 (99.2%) priority blocks and 186 nonpriority blocks. Breeding was Confirmed in 949 (95.1%) of the priority blocks, most frequently by observation of adults feeding young (302 FY records), fledged young (266 FL records), and nest with young (125 NY records). Robins were among the easiest species to find, identify, and confirm. It usually took only a few minutes to confirm breeding.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	949	95.1	95.9	1,114	86.6
Probable	29	2.9	2.9	40	3.1
Possible	12	1.2	1.2	22	1.7
Totals	990	99.2	100.0	1,176	91.4

\* 998 priority blocks

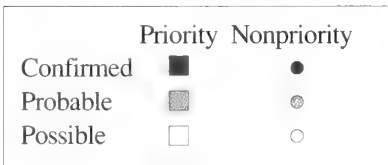
\*\* 1,286 total blocks (priority and nonpriority)



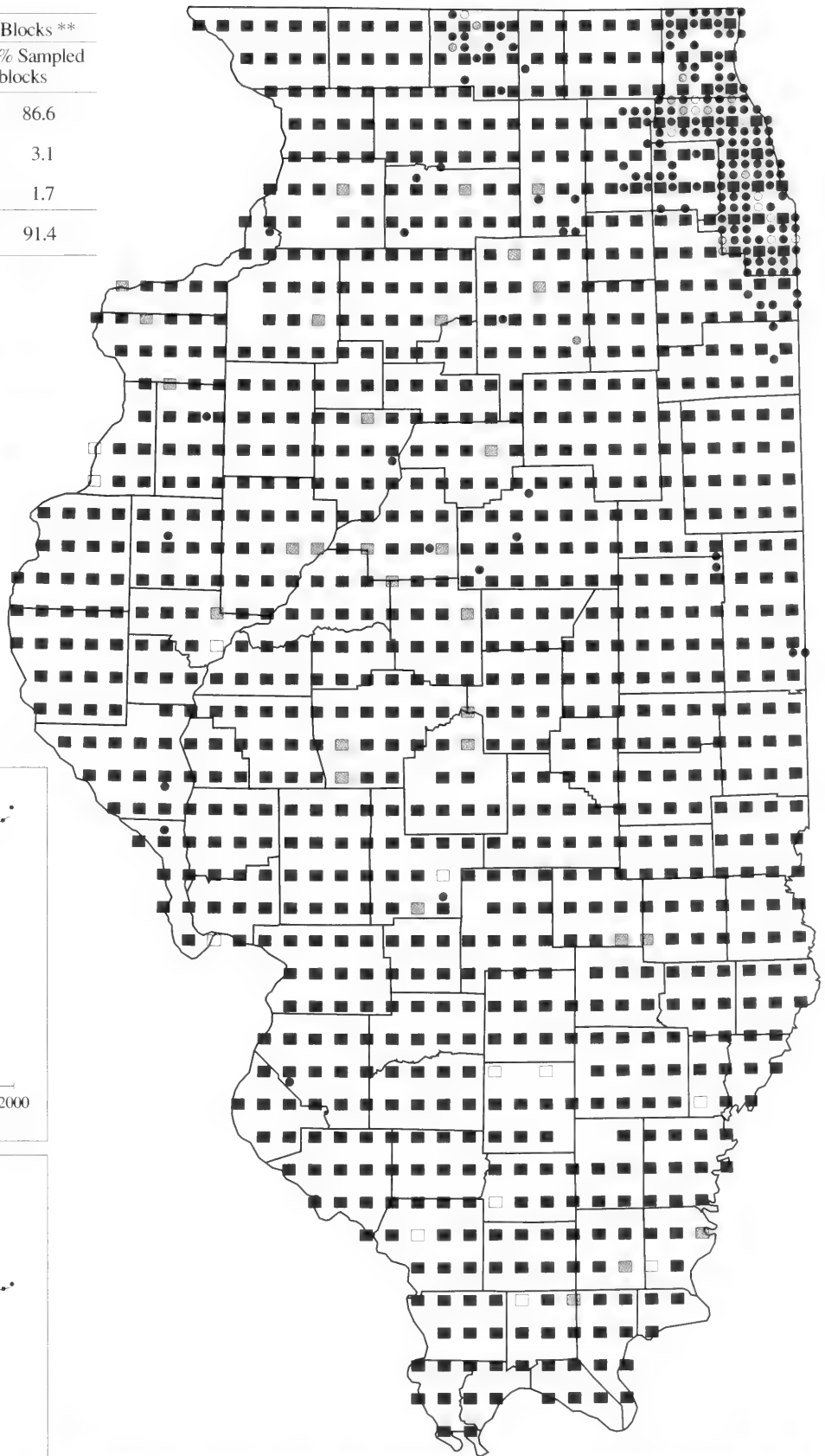
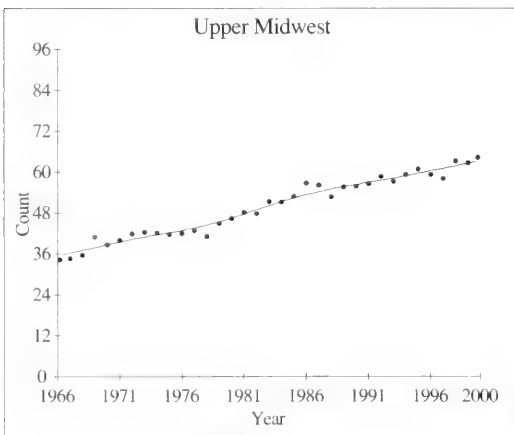
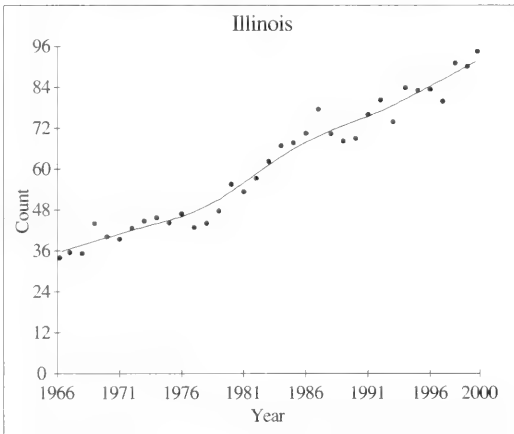
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**American Robin**



Peter Dring

**Code:** GRCA

**Rangewide Distribution:** southern Canada, most of the U.S. except far western and southwestern regions, south to Panama

**ILLINOIS**

**Abundance:** common migrant and summer resident; occasional winter resident

**Endangered/Threatened Status:** none

**Breeding Habitat:** shrubby woodlands, dense brushy forest, and wetland edges

**Nest:** a bulky cup of twigs, grass, forbs, and leaves lined with finer materials, in dense thicket

**Eggs:** 4, blue-green, unmarked although occasionally spotted with red

**Incubation:** 12–13 days

**Fledging:** from 10 to 11 days

riparian settings. It also nests in shrubs and hedges in residential areas (Graber et al. 1970). Catbirds have an easily identified song and a catlike “mew.” They are inquisitive, adaptable, and relatively tolerant of humans. Nests are well-hidden in impenetrable thickets, bushes, and tangles close to the ground. Two broods per season are normal for this species. Their diet in spring consists of mostly insects—ants, caterpillars, and beetles—and includes fruit and berries in the fall. Catbird nests are parasitized by Brown-headed Cowbirds, but cowbird eggs are quickly removed. Human settlement has increased available habitat, such as early successional habitat, forest edge, parks, and yards.

**Illinois History**

A century ago the Gray Catbird was considered a very common summer resident in Illinois (Cory 1909) and “one of our most familiar birds” (Ridgway 1889). Data from surveys in 1909 and 1957 indicated that a considerable population decline occurred during that half-century period (Graber and Graber 1963), perhaps due to loss of shrubby successional habitat, fencerows, hedgerows, and pastures.

**Breeding Bird Survey Trends**

From 1966 to 2000 the estimates are 0.7% per year (nonsignificant,  $P = 0.12$ ) for Illinois and 0.2% per year (nonsignificant,  $P = 0.53$ ) for the upper Midwest.

*Credibility Index:* IL = 2 and UM = 1.

**Distribution**

The Gray Catbird was reported throughout the state and from priority blocks in all 102 counties. It was one of the most frequently reported and widely distributed species in priority blocks during the atlas project (Table 4).

**Frequency**

The Gray Catbird was reported from 906 (90.8%) priority blocks and 171 nonpriority blocks. Breeding was Confirmed in 476 (47.7%) of the priority blocks. Catbirds were easily detected by their songs or catlike “mews.” Two-thirds of the Confirmed records in priority blocks were observations of adults feeding young (215 FY records) and fledged young (104 FL records). It is likely that catbirds bred in the majority of blocks where they were reported.

Gray Catbirds breed primarily in southern Canada and much of the U.S. except for the far western and southwestern regions. The genus name, *Dumetella*, means small thicket (Cimprich and Moore 1995). Although singing males can be quite conspicuous, the Gray Catbird is for the most part a fairly secretive bird of dense shrubby areas, thickets, fencerows, and woodland edges, especially in rural or

## Breeding Evidence

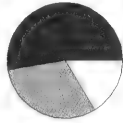
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	476	47.7	52.5	577	44.9
Probable	282	28.3	31.1	327	25.4
Possible	148	14.8	16.3	173	13.5
Totals	906	90.8	100.0	1,077	83.7

\* 998 priority blocks

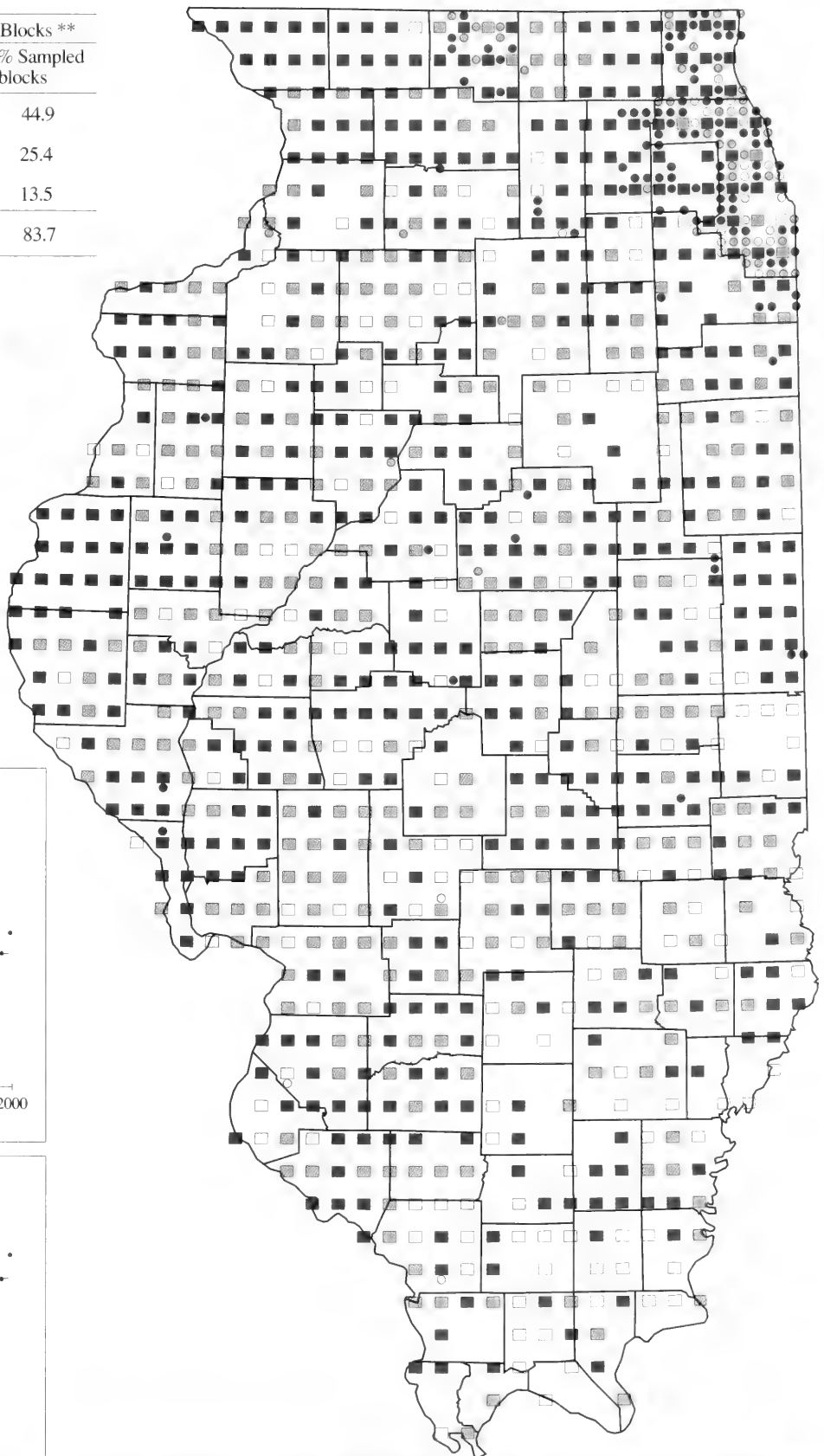
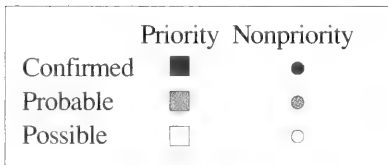
\*\* 1,286 total blocks (priority and nonpriority)



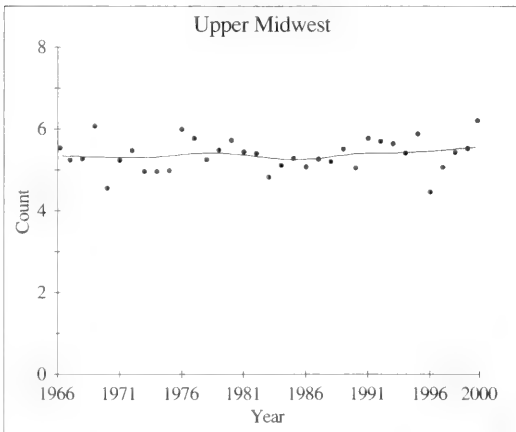
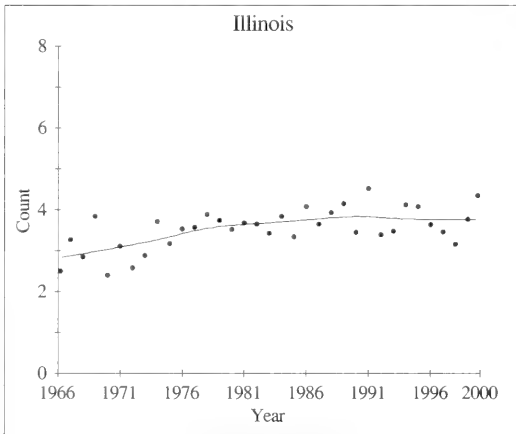
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

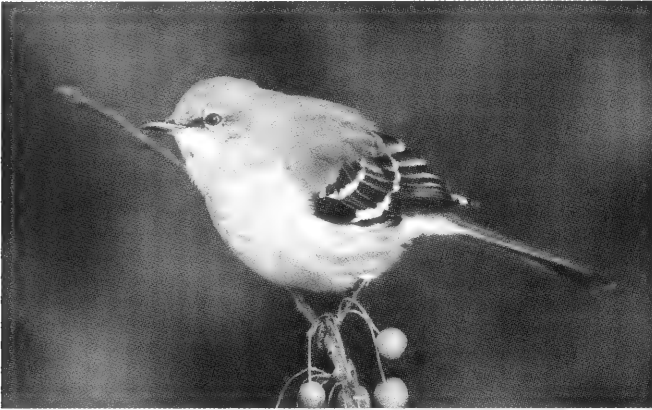


## Breeding Bird Survey Trends



**Gray Catbird**





Richard Day / Daybreak Imagery

**Code: NOMO**

**Rangewide Distribution:** far southern Canada to southern Mexico.

**ILLINOIS**

**Abundance:** permanent resident, common in the south, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** wide range of open to semi-open habitats, especially hedgerows and thickets.

**Nest:** a cup of twigs lined with grass and rootlets, in a dense shrub or tree or in vines.

**Eggs:** 3–5, blue-green, usually marked with browns.

**Incubation:** 12–13 days.

**Fledging:** from 11 to 13 days.

The Northern Mockingbird is a year-round resident primarily in the southern half and the northeastern region of the U.S. and in Mexico. It is known for its mimicking of songs of other birds as well as other sounds, and persistent singing that often continues through the night. This conspicuous species inhabits open areas with hedges, shrubby edges, and farms, and is common in suburban areas. The nest is usually placed low in the dense foliage of a tree or shrub. Mockingbirds are normally monogamous but occasionally bigamous or polyandrous mating occurs (Derrickson and Breitwisch 1992). Two to three broods per season are common, with broods frequently overlapping; in such cases the male cares for the fledglings while the female incubates the next clutch (Zaias and Breitwisch 1989). Nesting attempts later in the season (June–August) are often more successful than earlier attempts (Graber et al. 1970). They eat invertebrates, fruits,

and berries. The mockingbird is generally a southern species but its range has expanded northward during the past century. Birds that remain through the winter in the northern part of the range must cope with extreme weather conditions and be resourceful in finding food. During severe winters, the mockingbird population in the north often declines and is rather slow in recovering.

**Illinois History**

At the turn of the twentieth century the Northern Mockingbird was deemed to be “a common summer resident in portions of southern Illinois, but quite rare in northern Illinois” (Cory 1909). The state’s summer population, which was mostly in the south, declined between 1909 and 1957 (Graber and Graber 1963). This corresponds with changes in farming methods, which eliminated shrubby borders around fields. Although the state population declined overall, mockingbirds significantly increased in central Illinois between 1909 and 1957 (Graber and Graber 1963). In southern Illinois Graber et al. (1970) noted a seasonally fluctuating population, which suggested some migration may occur.

**Breeding Bird Survey Trends**

Populations of the Northern Mockingbird in both the state and region have declined over the period 1966–2000. The trend estimates are –2.6% per year (significant,  $P < 0.01$ ) for Illinois and –2.0% per year (significant,  $P < 0.01$ ) for the upper Midwest for 1966–2000. Loss of early successional and hedge habitat may have contributed to these declines. *Credibility Index:* IL = 2 and UM = 2.

**Distribution**

During the atlas project, Northern Mockingbirds were found mostly in the southern half and west-central parts of the state. They were sporadic and local in distribution in northern and east-central Illinois. This species was found in priority blocks in 93 counties.

**Frequency**

The Northern Mockingbird was reported from 577 (57.8%) priority blocks and 24 nonpriority blocks. Breeding was Confirmed in 290 (29.1%) of the priority blocks, primarily by observation of fledged young or adults feeding young (75 FL and 68 FY records). Because mockingbirds tend to be both visually and vocally conspicuous, they were probably detected when present in the block. Since they are generally permanent residents, it is likely that nesting occurred in the blocks in which they were reported.

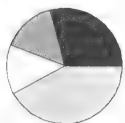


## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	290	29.1	50.3	299	23.3
Probable	150	15.0	26.0	153	11.9
Possible	137	13.7	23.7	149	11.6
Totals	577	57.8	100.0	601	46.7

\* 998 priority blocks

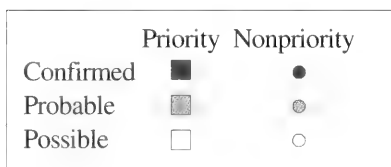
\*\* 1,286 total blocks (priority and nonpriority)



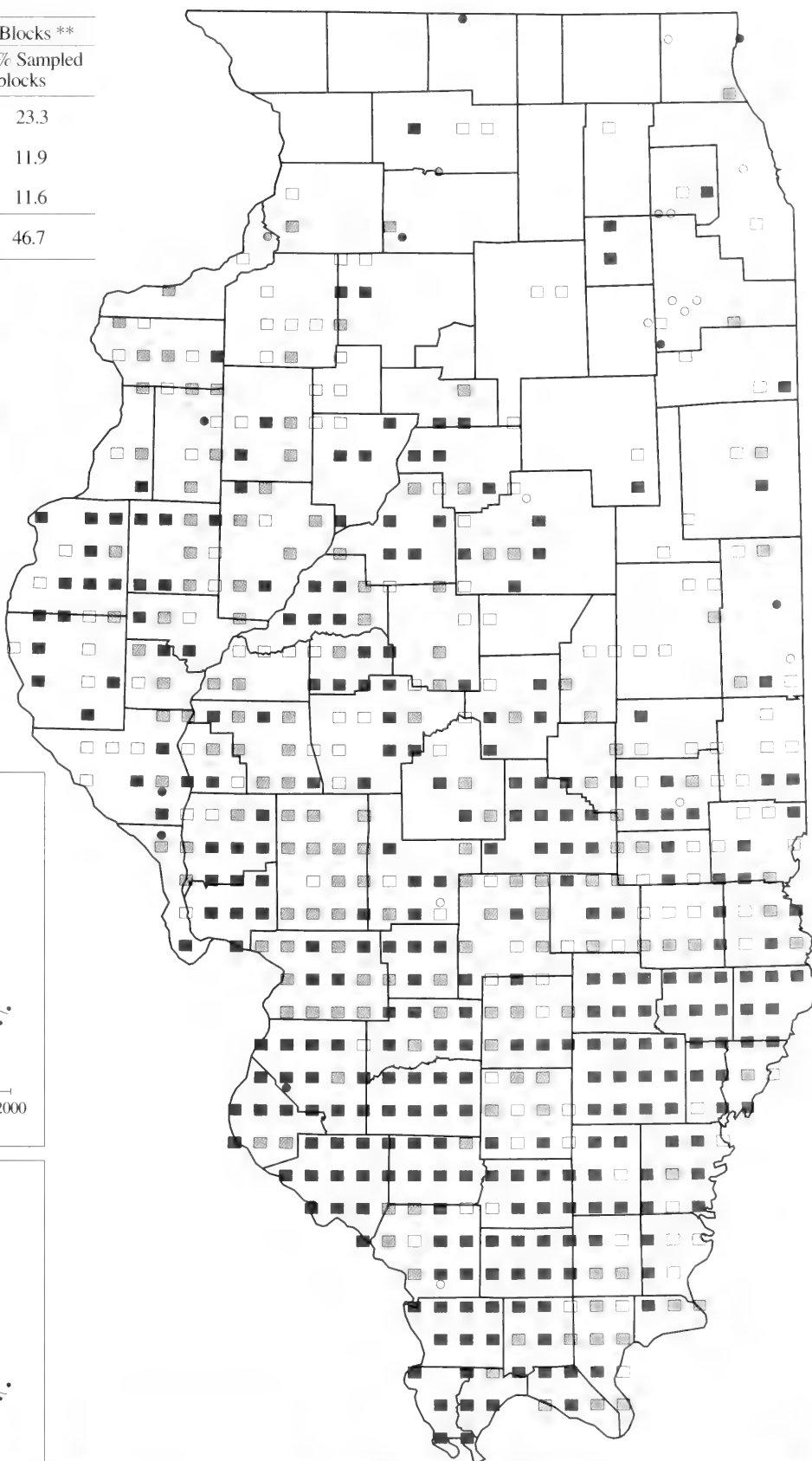
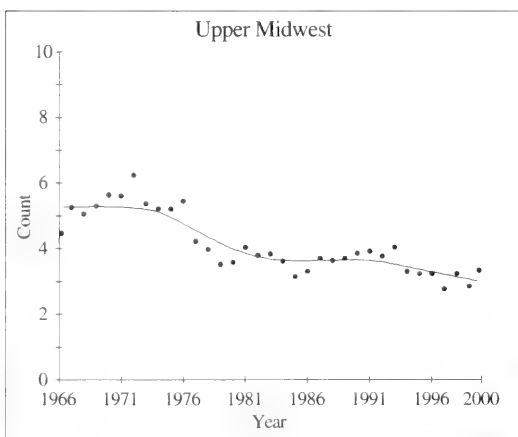
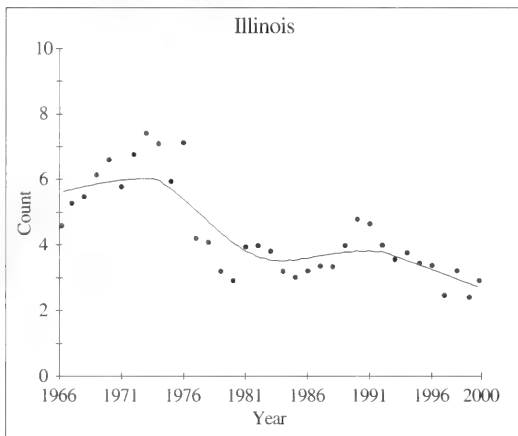
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Northern Mockingbird**



Joe Milosevich

**Code:** BRTH

**Rangewide Distribution:** eastern two-thirds of the U.S. and adjacent southern Canada, south to Florida and Texas.

**ILLINOIS**

**Abundance:** common migrant and summer resident; occasional winter resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** brushy areas, shrublands, forest edges and clearings; some residential areas.

**Nest:** a cup of twigs, dead leaves, and grasses lined with grass and rootlets, in low shrub or tree.

**Eggs:** 4–5, pale bluish white (occasionally greenish), spotted with reddish brown.

**Incubation:** 11–14 days.

**Fledging:** from 9 to 13 days.

The Brown Thrasher breeds in the U.S. and southern Canada from east of the Rocky Mountains to the Atlantic Ocean. This bird is named for its noisy thrashing about in the dense undergrowth. The Brown Thrasher's singing is limited primarily to early spring, and its repertoire, although large, is not as elaborate or extensive as that of its relative, the mockingbird. The song includes a series of warbled phrases, which are usually repeated in pairs. The Brown Thrasher can be found mostly in thickets, brushy areas, and woodland edges in rural settings and occasionally in residential areas. It is a ground-foraging bird that feeds mainly on invertebrates, fruits, berries, and seeds. Nests are hidden close to the

ground in the dense cover of shrubs or tangles. Thrashers are generally thought to be single-brooded with later nests being a second attempt after the loss of the first nest (Graber et al. 1970; Cavitt and Haas 2000). The clearing of the forests for agriculture and settlement of the Great Plains supported breeding range expansions in the late 1800s and early 1900s. Habitat for Brown Thrashers has declined since the mid-1950s with the removal of fencerows, hedgerows, and other shrubby habitat in rural areas. Early successional habitat is also less abundant.

**Illinois History**

A century ago the Brown Thrasher was a common summer resident in Illinois (Cory 1909). The state's summer thrasher population declined drastically between the early and mid-1900s; the population level in 1957 was about one-fourth that of 1909, perhaps due to the loss of orchards and hedgerow habitats (Graber and Graber 1963).

**Breeding Bird Survey Trends**

Brown Thrasher populations in Illinois and the upper Midwest experienced declines from 1966 to 2000. In the state the trend estimate is  $-0.9\%$  per year (significant,  $P = 0.01$ ) and in the upper Midwest it is  $-1.8\%$  per year (significant,  $P < 0.01$ ).

*Credibility Index:*  $IL = 1$  and  $UM = 2$ .

**Distribution**

The Brown Thrasher was widely distributed throughout the state during the atlas project. It was reported in priority blocks in all 102 counties and Confirmed as breeding in 100 of them. The lack of records in some areas may be due to inadequate searches rather than their absence. It was one of the most frequently reported species in priority blocks during the atlas project (Table 4).

**Frequency**

The Brown Thrasher was reported from 958 (96.0%) priority blocks and 125 nonpriority blocks. Breeding was Confirmed in 633 (63.4%) of the priority blocks. The Brown Thrasher was an easy species to find and confirm. The most frequently used breeding evidence criteria for Confirmed records in priority blocks were adults feeding young (240 FY records) and fledged young (171 FL records). Brown Thrashers probably bred in all the priority blocks in which they were recorded.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	633	63.4	66.1	692	53.8
Probable	209	20.9	21.8	251	19.5
Possible	116	11.6	12.1	140	10.9
Totals	958	96.0	100.0	1,083	84.2

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



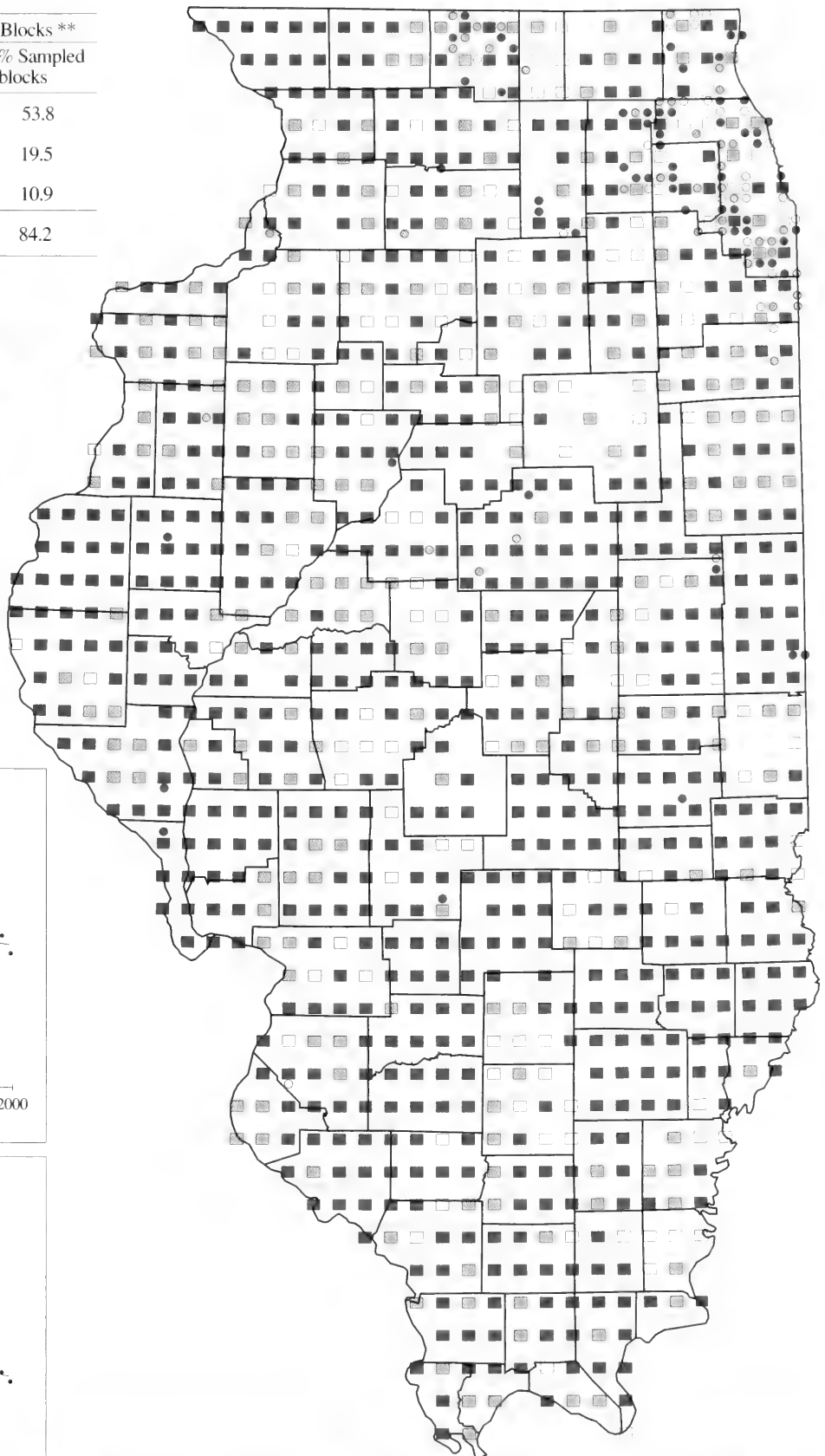
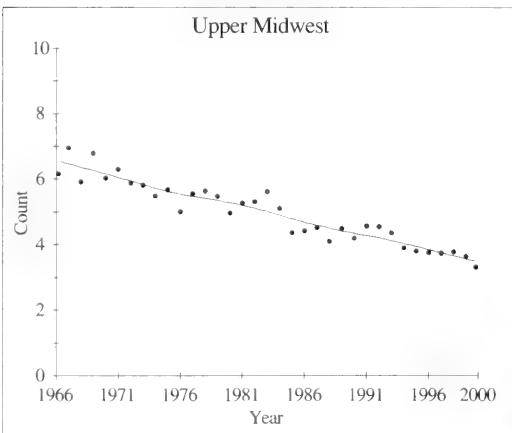
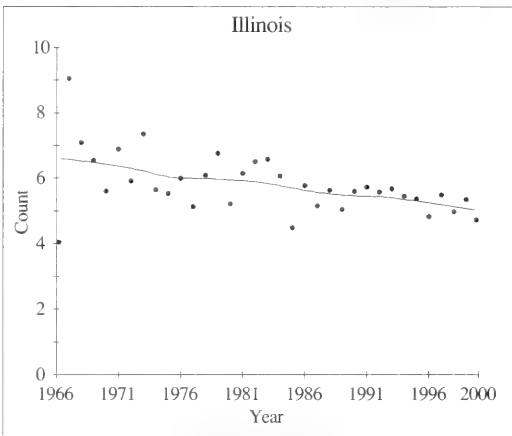
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○

## Breeding Bird Survey Trends



**Brown Thrasher**



Richard Day / Daybreak Imagery

**Code:** EUST

**Rangewide Distribution:** native to Europe and western Asia; in North America now includes southern Alaska, most of Canada, and the entire U.S., south into Mexico.

**ILLINOIS**

**Abundance:** abundant year-round resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open fields, woodland, suburbia, and cities.

**Nest:** a slovenly cup of grass, twigs, forbs, or straw lined with finer materials, in cavities.

**Eggs:** 4–6, pale bluish or greenish white, marked with browns.

**Incubation:** 12–14 days.

**Fledging:** from 18 to 21 days.

The European Starling had a modest beginning in North America when about 100 birds were released in New York City in the 1890s. In North America it is now one of the most abundant birds (Cabe 1993). It breeds throughout the U.S. and Canada. Starlings are found in nearly every habitat except dense forest. These birds are extremely adaptable and thrive in even the most heavily urbanized areas. At the expense of nearly all other cavity-nesting species, starlings utilize any sort of cavity for nesting, from natural cavities in trees to nooks and crannies in city, residential, and farm buildings. Many times they outcompete native species for

nesting sites, including usurping woodpeckers from their cavities and bluebirds from nest boxes. Starlings have a diverse and adaptive diet that includes fruits, berries, grain, seeds, and invertebrates. Although many populations are sedentary, those of the Midwest and Great Lakes regions may be migratory (Dolbeer 1982; Cabe 1993). Starlings are often present in large numbers year-round and winter roosts may contain several million birds (Bohlen 1989). The tremendous success of the European Starling in North America is due to the conversion of the native landscape to urban and agricultural land uses and the starling's ability to utilize a wide variety of nesting sites and food sources (Cabe 1993).

**Illinois History**

The first record of European Starlings in Illinois was from Champaign County in the winter of 1922 (Ford 1956). The species spread rapidly in the state, as evidenced by a summer population roughly estimated at 3.1 million in 1957 (Graber and Graber 1963). The European Starling is now one of the most abundant permanent residents in the state.

**Breeding Bird Survey Trends**

The trend estimate for the European Starling population in Illinois from 1966 to 2000 is 0.0% per year (nonsignificant,  $P = 0.96$ ). The trend estimate for the upper Midwest is  $-0.5$  per year (nonsignificant,  $P = 0.05$ ) over the 35-year period. Sample size and relative abundance for this species are among the highest in the state and the region.

*Credibility Index:* IL = 1 and UM = 1.

**Distribution**

The European Starling was found and Confirmed as breeding in priority blocks in every county during the atlas project. It was one of the most frequently reported and widely distributed species in priority blocks during the atlas project (Table 4) and probably occurred in every township as well.

**Frequency**

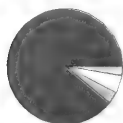
The European Starling was reported from 972 (97.4%) priority blocks and 180 nonpriority blocks. Breeding was Confirmed in 890 (89.2%) of the priority blocks, mostly by observations of fledged young, adults feeding young, and occupied nests (356 FL, 283 FY, and 147 ON records, respectively). Starlings likely nested in every atlas block.

## Breeding Evidence

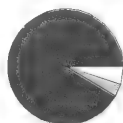
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	890	89.2	91.6	1,038	80.7
Probable	33	3.3	3.4	46	3.6
Possible	49	4.9	5.0	68	5.3
Totals	972	97.4	100.0	1,152	89.6

\* 998 priority blocks

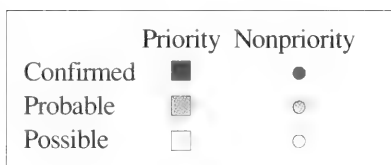
\*\* 1,286 total blocks (priority and nonpriority)



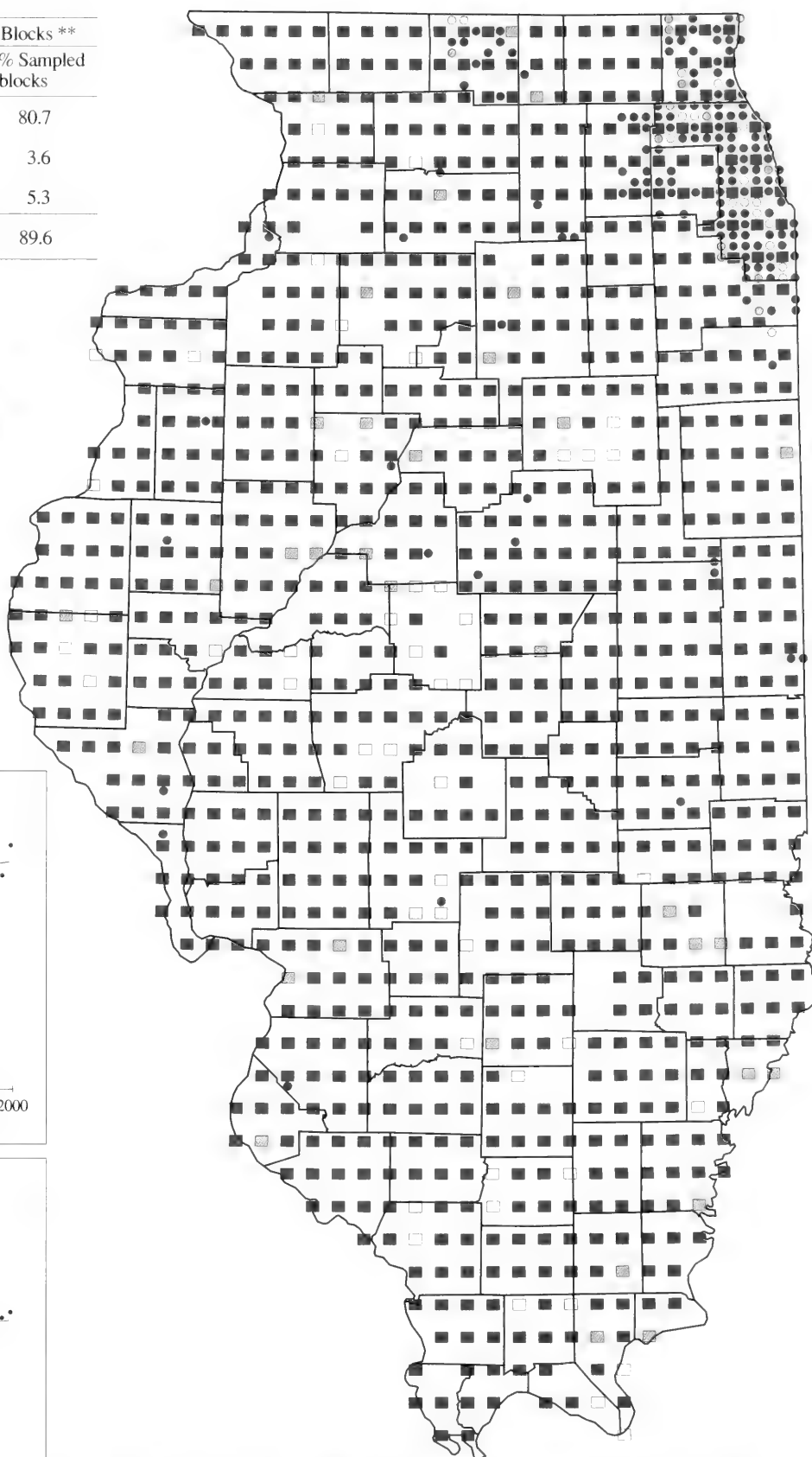
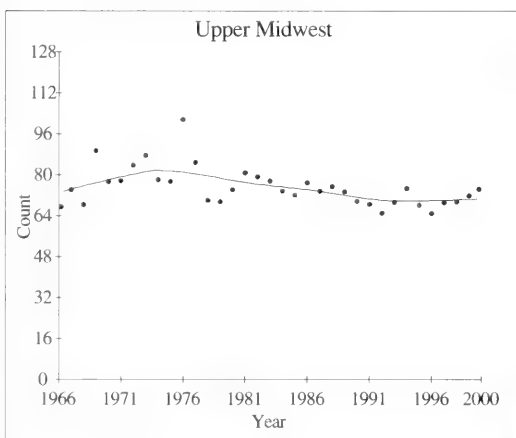
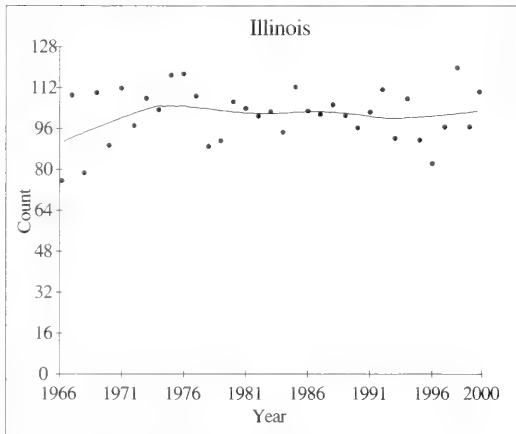
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**European Starling**



Joe Milosevich

**Code: CEDW**

**Rangewide Distribution:** southern half of Canada and the entire U.S., south through Central America to Panama

**ILLINOIS**

**Abundance:** common migrant and summer resident, uncommon winter resident; erratic at all seasons

**Endangered/Threatened Status:** none

**Breeding Habitat:** woodlands, forest edges, parks, and residential areas

**Nest:** a bulky and compact cup of twigs, grass, and moss lined with finer materials, in a medium to large tree

**Eggs:** 3–5, pale bluish gray, dotted with black or brown

**Incubation:** 10–16 days

**Fledging:** from 14 to 18 days

Cedar Waxwings are gregarious songbirds, often found in flocks in fruiting trees. They breed across the northern half of the U.S. and the southern half of Canada (Witmer 1996). Their sleek, tawny-colored plumage is enhanced with touches of red, yellow, and black. Waxwings are found in a variety of open or semi-open woodlands and inhabited areas with shrubs and small trees, including residential areas, parks, cemeteries, and farmsteads. Cedar Waxwings eat primarily fruit (mulberry, cherry, crabapple, cedar berries, etc.). In mid-to-late spring, while still feeding young, Waxwings switch from a diet of fruit to insects, which they capture by flycatching from a perch or by gleaning from vegetation. Nesting occurs later in the spring than for most

species. Nests are usually placed at wooded edges or in isolated trees or shrubs in old fields. They are secretive during the nesting season and do not establish territories (Saunders 1911). Waxwings may raise two broods per year (Mountjoy 1987). Their numbers at any particular location may fluctuate dramatically from year to year because they wander widely, apparently driven by the availability of fruit. Cedar Waxwing populations have increased in numbers and range in the past few decades.

**Illinois History**

Cedar Waxwings in the late 1800s were considered “an abundant species throughout the State, but it is so capricious in its movements that its presence or absence appears to bear no relation to season or weather” (Ridgway 1889). Cory (1909) addresses its erratic behavior by saying it was “a common summer resident . . . varying in numbers according to the severity of the season.”

**Breeding Bird Survey Trends**

From 1966 to 2000 the Cedar Waxwing population in Illinois increased at an annual rate of 10.3% (significant,  $P < 0.01$ ). The rate of increase in the upper Midwest population for the same period was less dramatic at 1.5% per year (significant,  $P < 0.01$ ).

*Credibility Index: IL = 1 and UM = 1.*

**Distribution**

During the atlas project, Cedar Waxwings were found in priority blocks in 97 counties. They were less frequently reported from priority blocks in the southern third of the state. Bohlen (1989) states that, while not common, they probably nest in all Illinois counties.

**Frequency**

The Cedar Waxwing was reported from 501 (50.2%) priority blocks and 134 nonpriority blocks. Breeding was Confirmed in 146 (14.6%) of the priority blocks, with the most frequently used breeding evidence criteria being adults feeding young (41 FY records), fledged young (31 FL records), and nest building (30 NB records). Because these birds are quiet during the breeding season and may not have been detected, it is possible that Cedar Waxwings bred more commonly than the atlas data indicate. Occasional flocks observed during the breeding season were most likely nonbreeding birds.



## Breeding Evidence

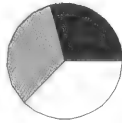
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	146	14.6	29.1	211	16.4
Probable	168	16.8	33.5	203	15.8
Possible	187	18.7	37.3	221	17.2
Totals	501	50.2	100.0	635	49.4

\* 998 priority blocks

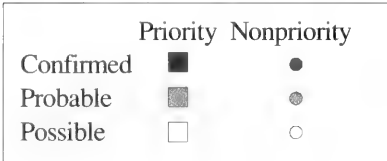
\*\* 1,286 total blocks (priority and nonpriority)



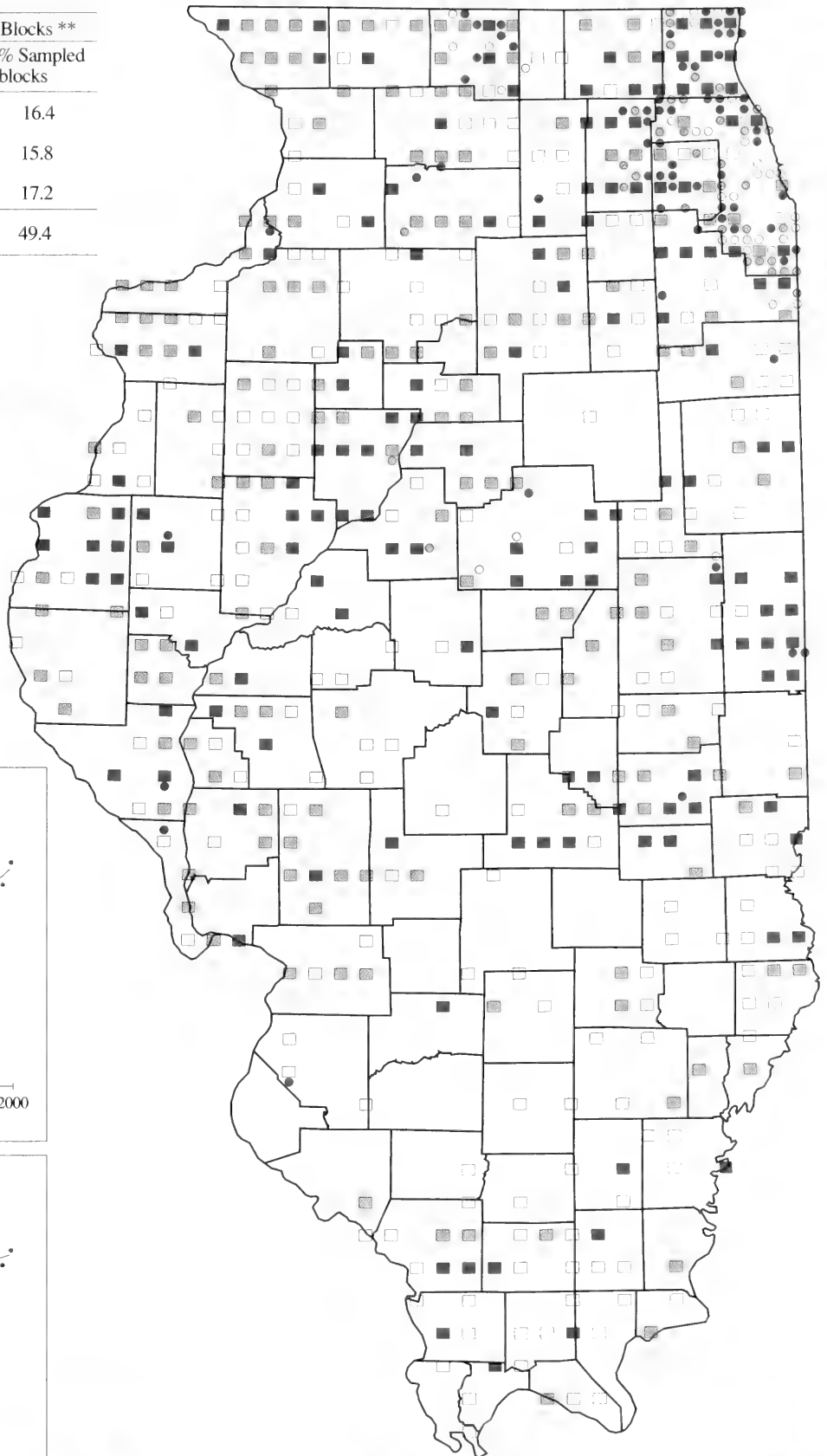
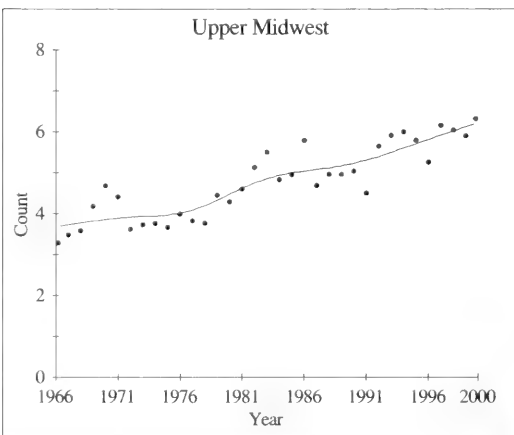
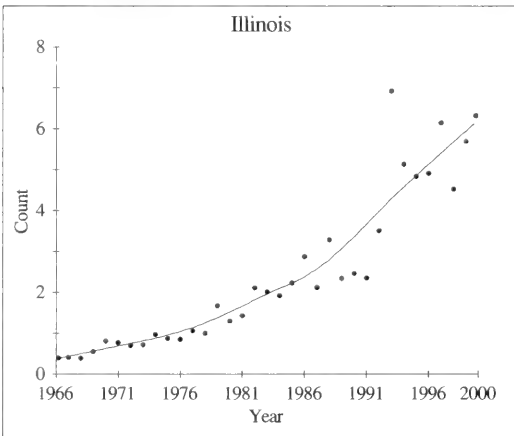
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Cedar Waxwing**





Eric Walters

**Code: BWWA**

**Rangewide Distribution:** eastern half of the U.S., south along the eastern coast of Central America.

**ILLINOIS**

**Abundance:** uncommon migrant and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** brushy hillsides, successional fields, and second-growth woods.

**Nest:** a deep, narrow, bulky cup of grass strips, dead leaves, and grapevine bark lined with fibers, hidden in grass or vines on or near the ground.

**Eggs:** 5, white, finely spotted with brown, mostly at large end.

**Incubation:** 10–11 days.

**Fledging:** from 8 to 10 days.

The Blue-winged Warbler, a bright yellow warbler with bluish wings, occupies open habitats, such as early to mid-successional and brushy areas and forest openings and edges. It forages for insects in the lower and mid-levels of vegetation. Its familiar “bee-buzz” song betrays its presence but the density of the habitat in which it lives makes it difficult to observe. Nests are difficult to find because they occur in very dense cover on or near the ground. Blue-winged Warblers breed mainly in the eastern U.S. north of the Gulf states. Over the past century their range has expanded to the east and north in response to the increased availability of their preferred habitat, but populations in some areas have declined with loss of shrublands through natural succession and conversion to other land uses (Gill et al. 2001). As the Blue-winged Warbler range expanded, nesting Golden-winged Warblers have gradually disappeared from those areas (Jackson et al. 1996). Whether this is a result of direct

competition or a response to changes in habitat or other factors is not known. Two identifiable hybrids, Brewster’s and Lawrence’s Warblers, result from the interbreeding of Blue-winged and Golden-winged Warblers. A pure cross between the two species produces the Brewster’s Warbler, and the much rarer Lawrence’s Warbler is a backcross between a Brewster’s and Blue-winged Warbler.

**Illinois History**

Around 1900 the Blue-winged Warbler was considered to be “a rather common summer resident in southern Illinois and a casual summer resident in northern Illinois” (Cory 1909). Prior to that, however, neither Ridgway (1874) nor Nelson (1876) indicated that it occurred at all in northern Illinois. In the early decades of the 1900s the species began appearing more regularly in the northeastern part of the state (Ford 1956). It has been suggested that Blue-winged Warblers gradually displaced the few Golden-winged Warblers that nested in the area. Although still rare, the Blue-winged Warbler is now a much more common breeding species than the Golden-winged Warbler in northern Illinois.

**Breeding Bird Survey Trends**

The Blue-winged Warbler is found in low numbers and on few routes in Illinois. For the period 1966–2000, the trend estimate is 42.2% per year (significant,  $P < 0.01$ ) for Illinois and 0.2% per year (nonsignificant,  $P = 0.89$ ) for the upper Midwest.

*Credibility Index: IL = 3 and UM = 2.*

**Distribution**

The Blue-winged Warbler was infrequently found during the atlas project; however, it was reported in priority blocks in 23 counties and Confirmed as breeding in 5 of them. Counties with Confirmed breeding included Cook, Lake, and Winnebago in the north and Pope and Union in the south.

**Frequency**

The Blue-winged Warbler was reported from 39 (3.9%) priority blocks and 30 nonpriority blocks. Breeding was Confirmed in 7 (0.7%) of the priority blocks. Because the male’s song is soft and difficult to hear and nesting occurs in dense habitat, the Blue-winged Warbler may have been underreported. It is likely that breeding may have occurred in many of the blocks where Probable or Possible breeding was recorded.

**Brewster’s and Lawrence’s Warblers**

During the atlas project, a Lawrence’s Warbler was Confirmed as breeding in Cook County and a Brewster’s Warbler was considered a Probable breeder in Jackson County.

## Breeding Evidence

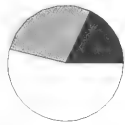
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	7	0.7	17.9	11	0.9
Probable	11	1.1	28.2	25	1.9
Possible	21	2.1	53.8	33	2.6
Totals	39	3.9	100.0	69	5.4

\* 998 priority blocks

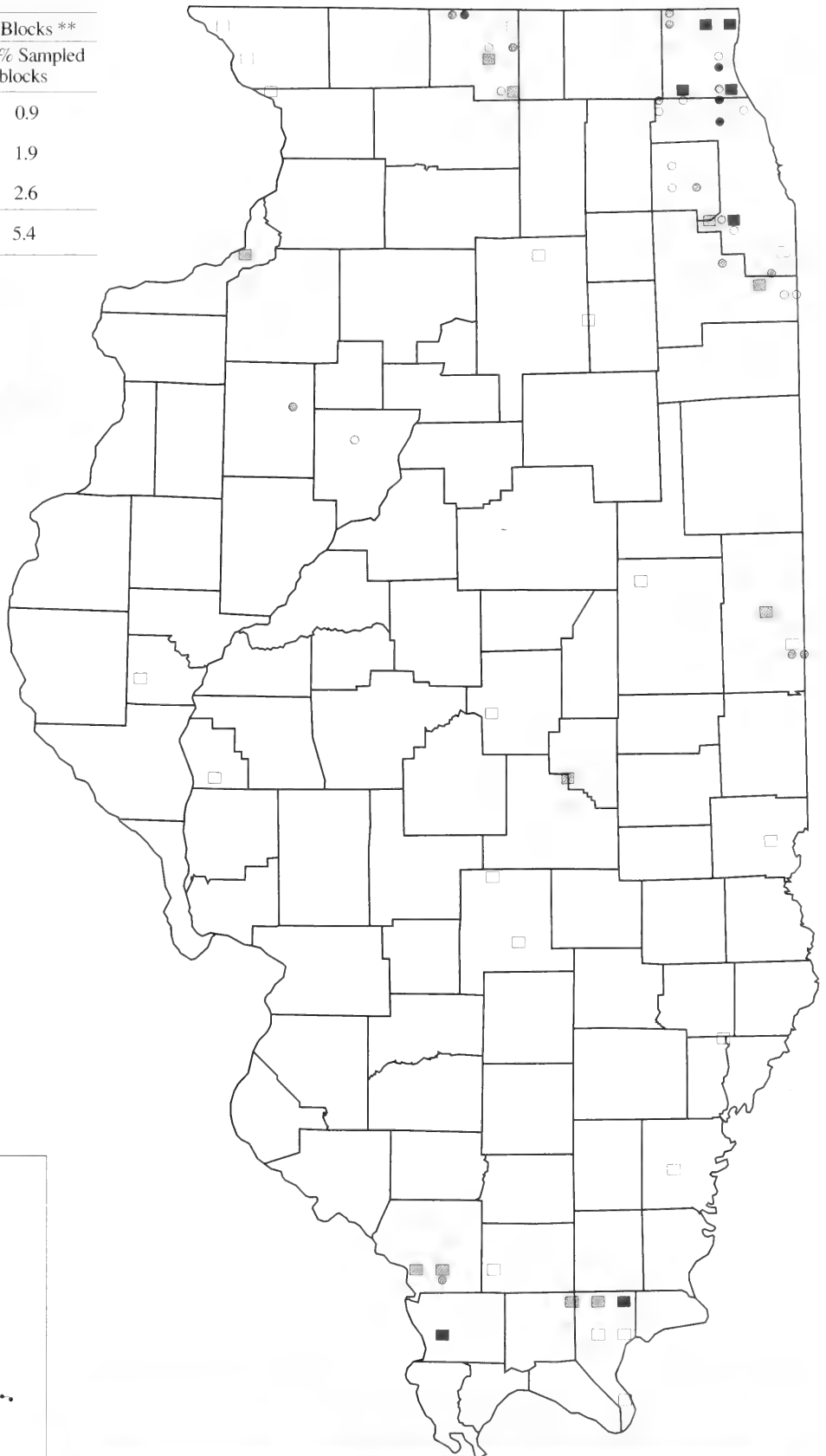
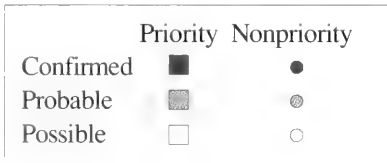
\*\* 1,286 total blocks (priority and nonpriority)



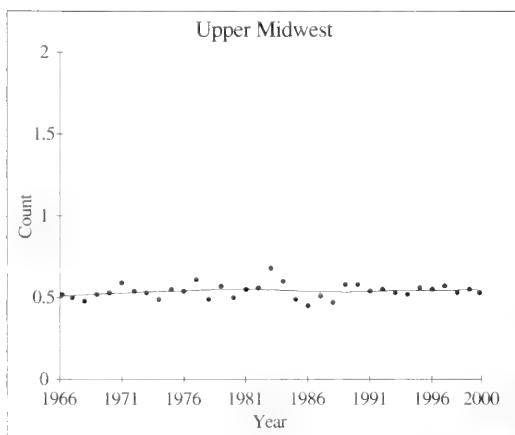
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Blue-winged Warbler**



Vern Kleen

**Code:** GWWA

**Rangewide Distribution:** far southeastern Canada, south through the eastern U.S. to the northwestern tip of South America.

**ILLINOIS**

**Abundance:** uncommon migrant and very rare summer resident in the north.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** early successional habitats of old fields.

**Nest:** an unkempt cup of long grass strips and grapevine bark lined with fine grapevine fibers, hidden in grassy clump on ground.

**Eggs:** 4-5, white, marked with browns (often wreathed).

**Incubation:** 10 days.

**Fledging:** from 9 to 10 days.

The Golden-winged Warbler occurs in early successional habitats and forest edges where there is an abundance of shrubs and small saplings intermixed with dense, herbaceous ground cover. Areas undergoing regeneration, such as clearcuts, old fields, and strip mines, provide some of the most suitable habitats. The male often sings his "bee, buzz, buzz, buzz" song from a tall tree. The secretive Golden-winged Warbler generally nests in the dense undergrowth, building its nest on or near the ground in vegetation near the base of a shrub or small tree. Golden-winged nests are parasitized by

Brown-headed Cowbirds, which reduces their reproductive success. The current breeding range of Golden-winged Warblers includes the northeastern and north-central U.S. and adjacent areas of far southern Canada, and the Appalachian Mountains. The population expanded in the late 1800s and the 1900s but is now declining in many areas as successional habitat matures and areas become reforested or are converted to other land use (Confer 1992). Blue-winged Warblers have expanded into the breeding range of Golden-winged Warblers and may be found in similar habitats, although the Golden-winged tends to inhabit more open areas with fewer trees. The range expansion may be contributing to the displacement and reduction of the Golden-winged population; however, the amount of direct competition, if any, between these species is not well understood (Confer 1992). These two species also interbreed, creating fertile hybrids (see Blue-winged Warbler account).

**Illinois History**

The Golden-winged Warbler was "a more or less common summer resident in parts of Illinois" around 1900 (Cory 1909). However, Graber et al. (1983) found little evidence to support that claim, especially for nesting birds. The Golden-winged Warbler is still a very rare breeder and apparently breeds only in the counties adjacent to Lake Michigan.

**Breeding Bird Survey Trends**

BBS data are not adequate for estimating population trends for the Golden-winged Warbler in Illinois. In the upper Midwest, the trend is estimated at -1.4% per year (nonsignificant,  $P = 0.06$ ) between 1966 and 2000.

*Credibility Index: IL = none and UM = 2.*

**Distribution**

Illinois is at the southwestern edge of the Golden-winged Warbler's breeding range. During the atlas project, it was rare and reported in only Lake and Cook counties.

**Frequency**

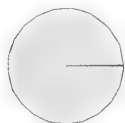
The Golden-winged Warbler was reported from 2 (0.2%) priority blocks and one nonpriority block (in northern Cook County). Breeding was Confirmed in a single priority block located in southwestern Cook County. Although rare, Golden-winged may have been overlooked because of their secretive habits.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	50.0	1	0.1
Probable	0	0.0	0.0	0	0.0
Possible	1	0.1	50.0	2	0.2
Totals	2	0.2	100.0	3	0.2

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

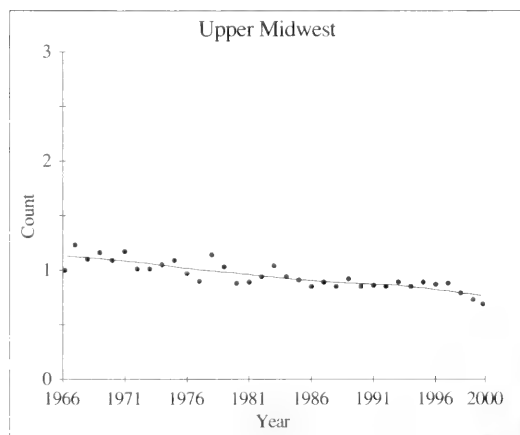


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Golden-winged Warbler**



Vern Kleen

## Code: NOPA

**Rangewide Distribution:** eastern U.S. and adjacent southern Canada, south to Honduras, and the Caribbean Islands.

## ILLINOIS

**Abundance:** fairly common migrant and common summer resident in southern Illinois, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous bottomlands and along streams in upland ravines.

**Nest:** a pendant or pocket hollowed in hanging lichens lined with fine materials, in a tree.

**Eggs:** 4–5, white to creamy, marked with brown or reddish brown (variable).

**Incubation:** 12–14 days.

**Fledging:** from 10 to 11 days.

This riparian woodland species breeds throughout southeastern Canada and most of the eastern half of the U.S., with gaps from Iowa through northern Ohio and parts of the northeast. The Northern Parula, one of the smallest birds that breeds in North America, inhabits bottomland forests and swamps where it has an affinity for sycamore, cottonwood, and bald cypress trees (Graber et al. 1983). It spends its time high in deciduous trees, feeding on insects and spiders. Nests are typically built in hanging epiphytes (e.g., Spanish moss in the South, beard moss in the North) or constructed with

epiphytes and other vegetation (Moldenhauer and Regelski 1996) and are usually placed in the upper tree canopy over or near water. Parula populations have been impacted by forest destruction and fragmentation, and the loss of epiphytes due to air pollution (Moldenhauer and Regelski 1996). Forestry practices and the availability of epiphytes are critical factors affecting the Northern Parula population in North America (Moldenhauer and Regelski 1996).

## Illinois History

In the late 1800s and early 1900s the Northern Parula in Illinois was considered “not uncommon . . . during summer” (Ridgway 1889) and a common summer resident (Cory 1909). Ford (1956) stated that there are few historical records, even of migrants, in the Chicago region. Graber et al. (1983) noted a distinct gap in the breeding range between central Illinois and central Wisconsin.

## Breeding Bird Survey Trends

The trend estimate for the Northern Parula population in Illinois for the period 1966–2000 is 2.7% per year (nonsignificant,  $P = 0.31$ ). A population increase of 2.3% per year (significant,  $P < 0.01$ ) is estimated for the upper Midwest for the same period.

*Credibility Index:*  $IL = 2$  and  $UM = 2$ .

## Distribution

During the atlas project, Northern Parulas were reported in priority blocks in 65 counties, including 14 counties where breeding was Confirmed. Because of their affinity for bottomland and riparian forests, their distribution is largely confined to the major river valleys and southern Illinois. The distribution pattern of the atlas data is similar to that reported by Graber et al. (1983).

## Frequency

The Northern Parula was reported from 197 (19.7%) priority blocks and 11 nonpriority blocks. Breeding was Confirmed in 19 (1.9%) of the priority blocks. Northern Parulas were easy to detect by their loud and distinctive song but finding nests and confirming breeding was more difficult. It was Confirmed in only 10% of the 197 priority blocks in which it was recorded, which is among the lowest rates of confirmation for species reported in more than 10 priority blocks. Because its preferred habitat of riparian forests was not well sampled during the atlas project, it is likely that the Northern Parula occurred in more blocks than the atlas data indicate.

## Breeding Evidence

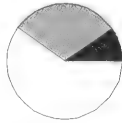
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	19	1.9	9.6	23	1.8
Probable	60	6.0	30.5	65	5.1
Possible	118	11.8	59.9	120	9.3
Totals	197	19.7	100.0	208	16.2

\* 998 priority blocks

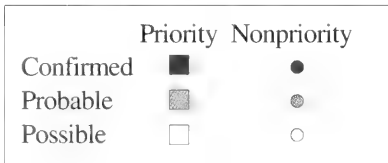
\*\* 1,286 total blocks (priority and nonpriority)



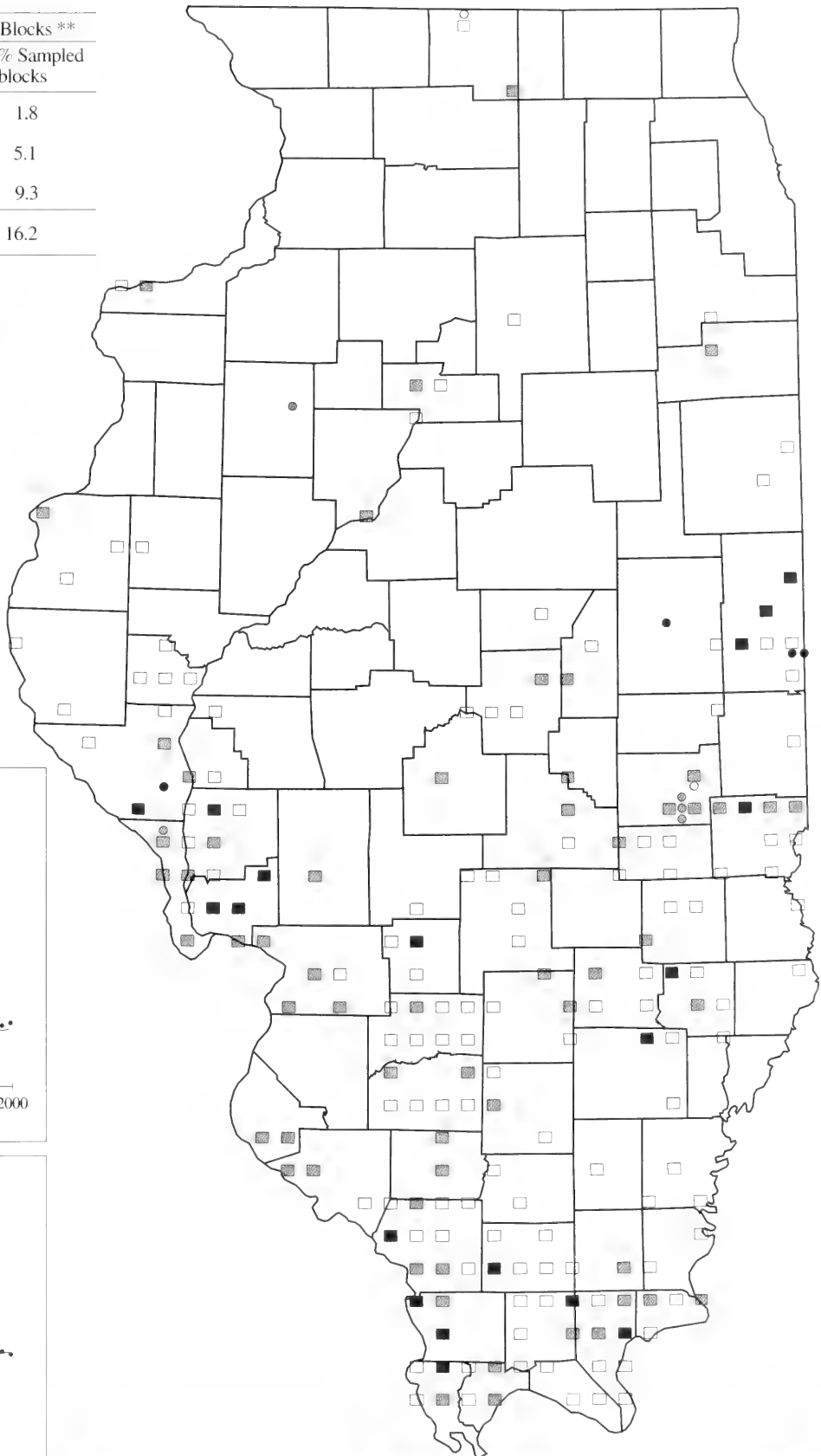
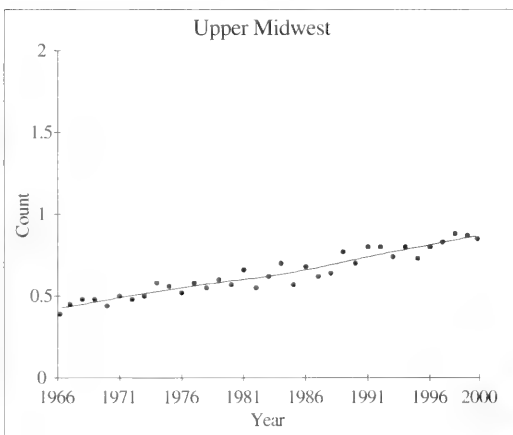
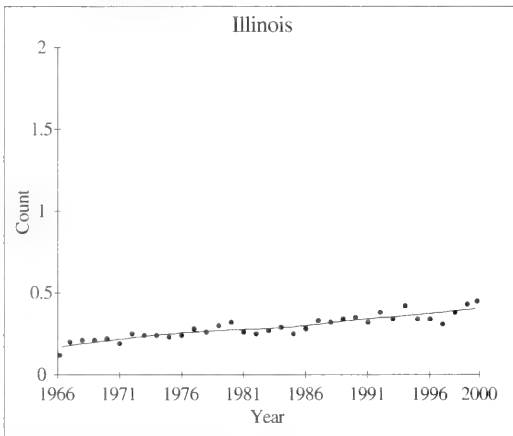
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Northern Parula**



Chicago Academy of Sciences

## Code: YWAR

**Rangewide Distribution:** northern Alaska and Canada south through most of the U.S. into northern South America.

## ILLINOIS

**Abundance:** common migrant and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** wet second-growth woodlands, scrub, gardens, and riparian thickets.

**Nest:** a neat, compact cup of weed stalks, plant fiber, shredded bark, and grass lined with fine materials, in a tree.

**Eggs:** 4–5, off-white, occasionally pale green, marked with browns, olive or gray, barely spotted to strongly splotched.

**Incubation:** 11–12 days.

**Fledging:** from 9 to 12 days.

The Yellow Warbler, the most widespread breeding warbler in North America, breeds throughout much of the continent north of the southern states to northern Canada, and in parts of Mexico. The Yellow Warbler occurs in a variety of habitats, such as woodlands and parks, but most often it inhabits riparian areas with young woody growth, such as dense stands of willows next to a stream or pond (Graber et al. 1983). Nests are built in an upright fork of a small or medium-height tree or shrub, generally 3 to 12 feet above

ground and usually along streams. Yellow Warbler nests are often parasitized by Brown-headed Cowbirds; however, this species responds by building a new nest on top of the old one containing cowbird eggs.

## Illinois History

In the late 1800s and early 1900s the Yellow Warbler was “one of the most abundant of our summer birds” (Ridgway 1889) and a very common summer resident (Cory 1909). It was still considered a common summer resident in the mid-1900s (Smith and Parmalee 1955). A major population decline was noted beginning in the early 1900s. Graber et al. (1983) compared data from the same area for three time periods (1904–1910, 1957–1969, and 1979–1980) and found a consistent decline in abundance. Counts in the latter period were down 94% from 1904–1910 levels. Cowbird parasitism has been suggested as a cause of the decline; parasitism rates increased after 1900 (from 6% prior to 1900 to 40% after 1900) (Graber et al. 1983).

## Breeding Bird Survey Trends

During the period 1966–2000, the Yellow Warbler population in Illinois increased at an estimated rate of 6.3% per year (significant,  $P < 0.01$ ). The increase in the upper Midwest population is estimated at 1.8% per year (significant,  $P < 0.01$ ) for 1966–2000.

**Credibility Index:**  $IL = 2$  and  $UM = 2$ .

## Distribution

The Yellow Warbler population was widely distributed throughout the state during the atlas project and it was reported in priority blocks in 99 counties. It was most frequently reported from priority blocks in the north. Graber et al. (1983) believed that the Yellow Warbler should occur as a breeding species in every Illinois township.

## Frequency

The Yellow Warbler was second only to the Common Yellowthroat as the most common nesting warbler in Illinois. It was reported from 492 (49.3%) priority blocks and 130 nonpriority blocks. Breeding was Confirmed in 131 (13.1%) of the priority blocks, mostly by observations of adults feeding young (62 FY records) followed by occupied nests (22 ON records). It is likely that nesting occurred in most blocks in which the species was reported.

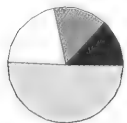


## Breeding Evidence

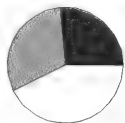
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	131	13.1	26.6	187	14.5
Probable	151	15.1	30.7	201	15.6
Possible	210	21.0	42.7	234	18.2
Totals	492	49.3	100.0	622	48.4

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

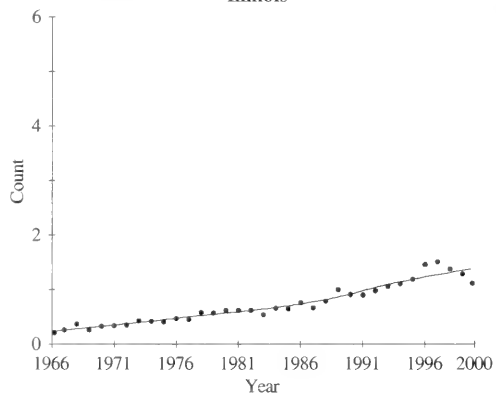


% of priority blocks with records for this species

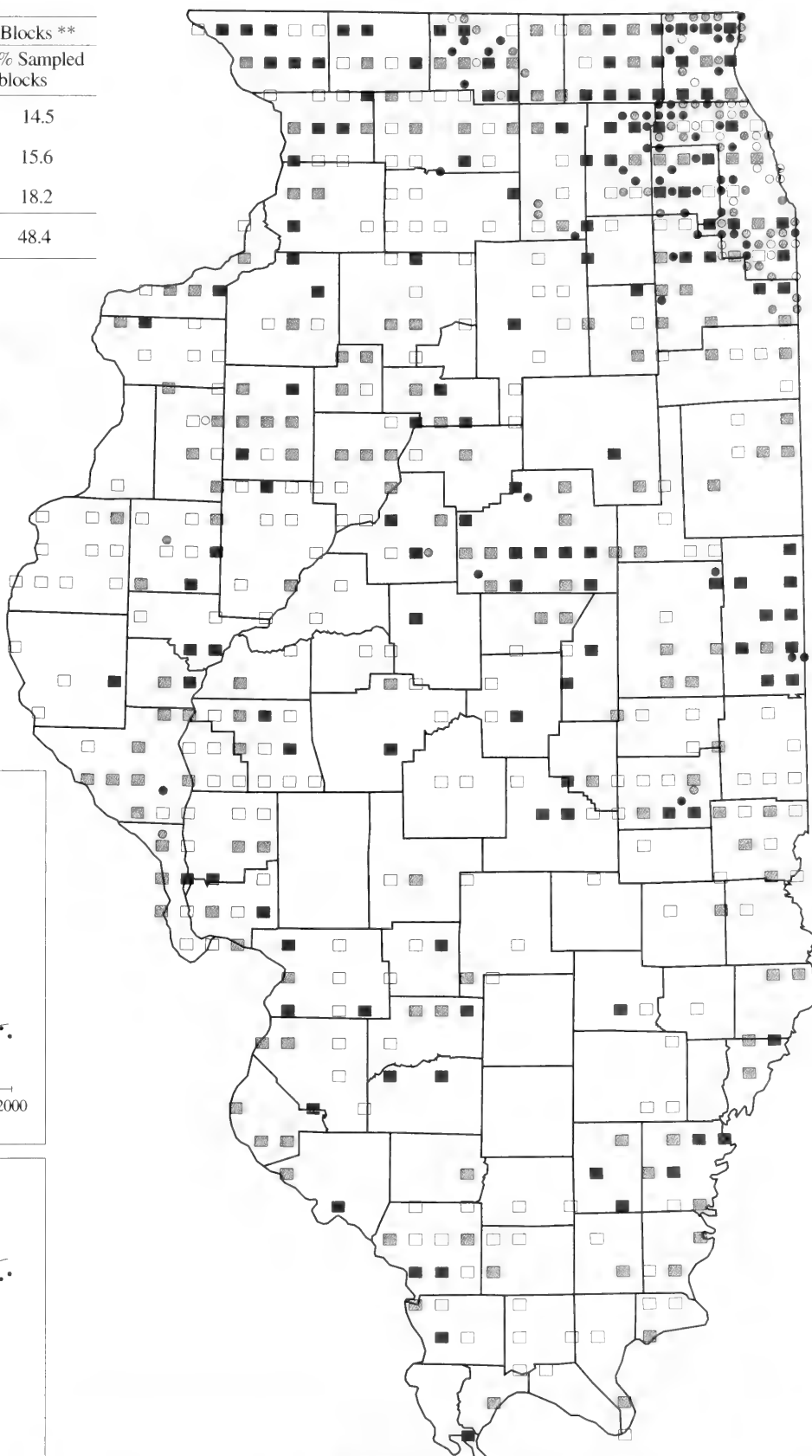
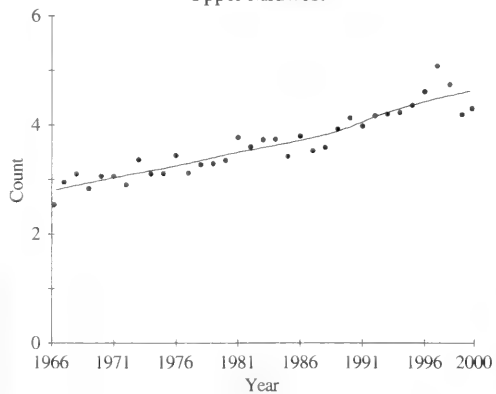
	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○

## Breeding Bird Survey Trends

Illinois



Upper Midwest



**Yellow Warbler**



Todd Fink / Daybreak Imagery

**Code:** CSWA

**Rangewide Distribution:** south-central and southeastern Canada and the eastern half of the U.S., south to Panama.

**ILLINOIS**

**Abundance:** common migrant and rare to locally uncommon summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** second-growth, brushy thickets, deciduous woodland edges, and regenerating clearcuts.

**Nest:** a loosely constructed cup of fine plant material lined with finer materials, in a shrub.

**Eggs:** 4, white to off-white, marked with browns.

**Incubation:** 12–13 days.

**Fledging:** from 10 to 12 days.

The Chestnut-sided Warbler is a colorful and active bird of second-growth woodlands, dense brushy areas, and forest edge. The breeding range is eastern North America and includes southern Canada, the northern states from Minnesota to Pennsylvania, and the Appalachian Mountains. The male's song has been described as "pleased, pleased, pleased to meetcha." Nests are usually built in thickets or shrubs within four feet of the ground and are difficult to locate. This warbler's population and range increased since the early 1800s, coinciding with the clearing of forests and the subsequent availability of early successional habitat. Since the early 1960s the rangewide population has slowly declined (Richardson and Brauning 1995). The population of Chestnut-sided Warblers is vulnerable to habitat loss as successional habitat matures into forests (Askins 2000) and

to brood parasitism by Brown-headed Cowbirds. Early successional habitat specialists, including the Chestnut-sided Warbler, benefit from management practices that maintain the vegetative structure of this habitat.

**Illinois History**

Illinois is at the southern edge of the Chestnut-sided Warbler's breeding range, and it is primarily a migrant in the state. During the late 1800s and early 1900s, the Chestnut-sided Warbler was known to breed in the northern portion of Illinois, but how far south it occurred was not known (Ridgway 1889). It was described as a more or less common summer resident in northern Illinois in the early 1900s (Cory 1909). Although there are early historical breeding records in Missouri around St. Louis (Gault 1892; Graber et al. 1983), their appearance in extreme southern Illinois is either relatively recent or previously undetected.

**Breeding Bird Survey Trends**

The population of Chestnut-sided Warblers in Illinois is too small and localized to be adequately sampled by the BBS. For 1966–2000 the trend estimate for the upper Midwest is  $-0.2\%$  per year (nonsignificant,  $P = 0.69$ ).

**Credibility Index:**  $IL = \text{none}$  and  $UM = 1$ .

**Distribution**

Two small, disjunct populations, one in the northeast and the other at the southern tip of the state, were found during the atlas project. Birds were not common at either location, but probably more common than the data indicate. The Chestnut-sided Warbler was reported from priority blocks in six counties, but is suspected to breed in other northern and southern counties as well. A moderate population has been found breeding in clearcuts at Lowden-Miller State Forest since the atlas project (S. Bailey, pers. comm.). More information about the distribution of this warbler in the state is needed.

**Frequency**

The Chestnut-sided Warbler was reported from 9 (0.9%) priority blocks and 9 nonpriority blocks. Breeding was Confirmed in 1 of the 18 blocks in which it was found, a priority block in southern Illinois. Because of its easily recognized song, the Chestnut-sided is easy to detect; therefore, the scarcity of records implies that it is rare in the state. Although the only Confirmed nesting was found in extreme southern Illinois, the species may have bred in the other blocks in which it was reported.

## Breeding Evidence

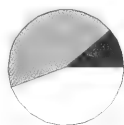
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	11.1	1	0.1
Probable	4	0.4	44.4	9	0.7
Possible	4	0.4	44.4	8	0.6
Totals	9	0.9	100.0	18	1.4

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

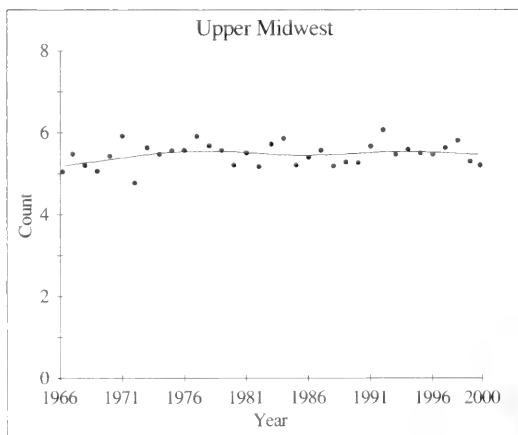


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Chestnut-sided Warbler**



Dennis Oehmke

**Code:** BTNW

**Rangewide Distribution:** central and eastern Canada, south through the eastern half of the U.S. to northern South America, and the Caribbean Islands.

**ILLINOIS**

**Abundance:** common migrant, very rare summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open coniferous and mixed coniferous-deciduous forests.

**Nest:** a deep, compact cup of grass, moss, bark, and plant fibers lined with fine materials, in a tree.

**Eggs:** 4–5, off-white, marked with browns; usually wreathed.

**Incubation:** 12 days.

**Fledging:** from 8 to 10 days.

The Black-throated Green Warbler is common in the coniferous forests of southern Canada, the north-central and northeastern states, and the Appalachian Mountains. It is also found in mixed coniferous-deciduous and deciduous forests in the southern part of its range (Morse 1993). The Black-throated Green Warbler has one of the most prolonged migrations among northern warbler species; the first migrants routinely appear in early April and the last migrants

linger well into June in Illinois (Graber et al. 1983). This species mainly eats insects, especially caterpillars, which it gleans from small branches. Black-throated Greens usually nest in conifers where a small branch forks from the trunk. Parasitism by Brown-headed Cowbirds is known to occur, probably mostly in nests near the forest edge (Morse 1993).

**Illinois History**

The first confirmed breeding of the Black-throated Green Warbler in Illinois was found at Lowden-Miller State Forest in Ogle County in 1994 (Robinson 1995). Nests were found in a plantation of white pines and were placed relatively high in the trees (Robinson 1995). Prior to that siting, the closest known nesting population was in central Wisconsin. Graber et al. (1983) noted that “Of the northern warblers, the Black-throated Green may be the most inclined to linger late in the spring—singing males are present well into June, which may account for the references to breeding in Illinois.”

**Breeding Bird Survey Trends**

BBS data are not adequate for estimating population trends for the Black-throated Green Warbler in Illinois. In the upper Midwest the trend estimate for 1966–2000 is 0.8% per year (nonsignificant,  $P = 0.48$ ).

*Credibility Index:* IL = none and UM = 2.

**Distribution**

During the atlas project, Black-throated Green Warblers were primarily found in appropriate habitat in the northern part of the state. Since the atlas project ended, nests of these warblers have been found at Lowden-Miller State Forest in Ogle County and birds have been observed at other northern Illinois locations.

**Frequency**

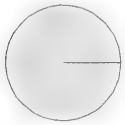
The Black-throated Green Warbler was reported from 1 (0.1%) priority block and 3 nonpriority blocks. Breeding was not Confirmed in any block and was classified as Possible at all four sites where it was reported (two in Lake and one each in Winnebago and Kankakee counties). Males are persistent singers, even during the spring migration. Because they have a prolonged migration period, birds reported during the atlas project may have been migrants.

## Breeding Evidence

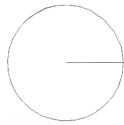
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	0	0.0	0.0	0	0.0
Probable	0	0.0	0.0	0	0.0
Possible	1	0.1	100.0	4	0.3
Totals	1	0.1	100.0	4	0.3

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

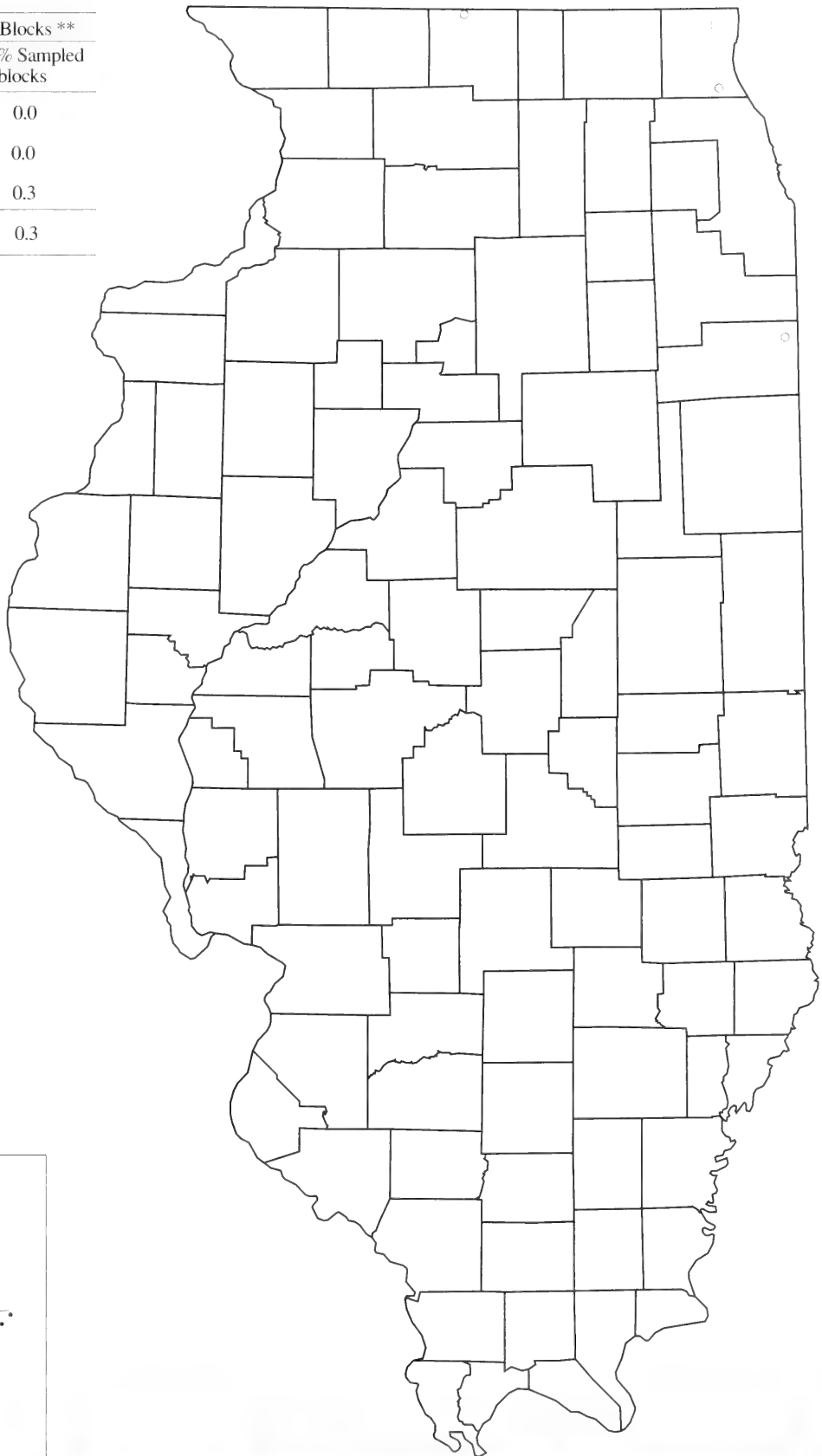


% of 998 sampled priority blocks (gray = no records for this species)

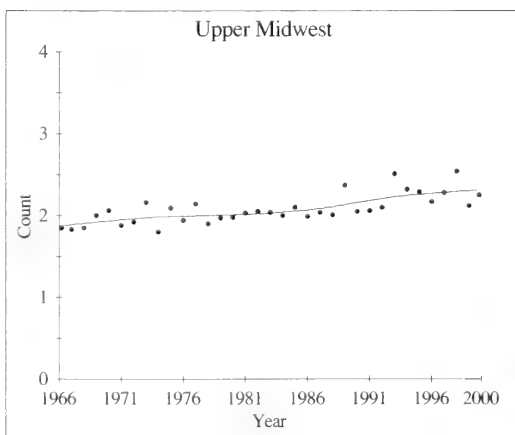


% of priority blocks with records for this species

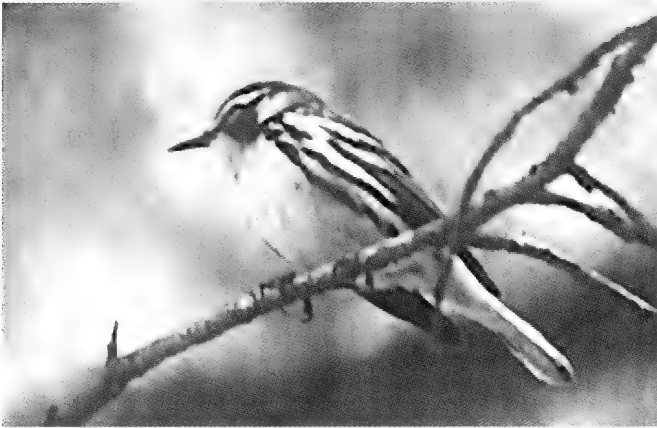
	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Black-throated Green Warbler**



Eric Walters

**Code:** YTWA

**Rangewide Distribution:** eastern U.S. south of the northern tier of states through eastern Mexico to Costa Rica, and the Caribbean Islands.

**ILLINOIS**

**Abundance:** common migrant and summer resident in the south, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** pine-oak woodlands, river corridors, and cypress swamps.

**Nest:** a cup of fine grass, bark strips, weed stems, and plant down lined with down and feathers, in a tree; where available, uses Spanish moss.

**Eggs:** 4, dull greenish gray-white, marked with purples, reds or browns; occasionally wreathed.

**Incubation:** 12–13 days.

**Fledging:** not currently known.

The Yellow-throated Warbler is a common bird in the southeastern U.S.; its breeding range extends north to northern Illinois and east to Pennsylvania. The breeding range is currently expanding northward (Hall 1996). In most of its range it is a species of mature bottomland forests and sometimes upland mixed deciduous-coniferous forests. In early literature the Yellow-throated Warbler was aptly named the Sycamore Warbler because of its affinity for sycamore

trees. Yellow-throated Warblers inhabit the upper canopy and forage for insects under the bark of trees in a manner similar to Brown Creepers. Their nests are rarely observed because they are built high in a tree, generally in a fork or at the tip of a horizontal branch, and are well hidden from below.

**Illinois History**

Ridgway (1889) was unclear as to the status of the Yellow-throated Warbler, indicating that it was “a common summer resident in the bottom-lands, where . . . it lives chiefly in the large sycamore trees along or near water courses” but that the distribution was not well known. Cory (1909) indicated that it was a common summer resident in the south and rare in the north. Both noted that it was associated with sycamore trees. Yellow-throated Warblers are also found in the cypress swamps, mixed coniferous-deciduous forests, and pine plantations in southern Illinois (Graber et al. 1983; Bohlen 1989).

**Breeding Bird Survey Trends**

The trend estimate for the Yellow-throated Warbler population in Illinois, which is based on a small sample size and low relative abundance, is 2.5% per year (nonsignificant,  $P = 0.63$ ) for 1966–2000. The trend estimate for the upper Midwest is 3.4% per year (nonsignificant,  $P = 0.07$ ) for the same time period.

*Credibility Index:*  $IL = 3$  and  $UM = 2$ .

**Distribution**

During the atlas project, Yellow-throated Warblers were found in priority blocks scattered throughout the state in a total of 48 counties, but were most frequently reported from priority blocks in the south. Nearly all were associated with swamps, floodplain forests, or riparian habitats. In the northern part of the state the population is either increasing slightly or is being detected more frequently.

**Frequency**

The Yellow-throated Warbler was reported from 95 (9.5%) priority blocks and 11 nonpriority blocks. Breeding was Confirmed in 11 (1.1%) of the priority blocks, mostly as a result of observing adults carrying food for young (6 FY records). It is possible that nesting occurred in the majority of blocks in which it was recorded.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	11	1.1	11.6	18	1.4
Probable	30	3.0	31.6	33	2.6
Possible	54	5.4	56.8	55	4.3
Totals	95	9.5	100.0	106	8.2

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

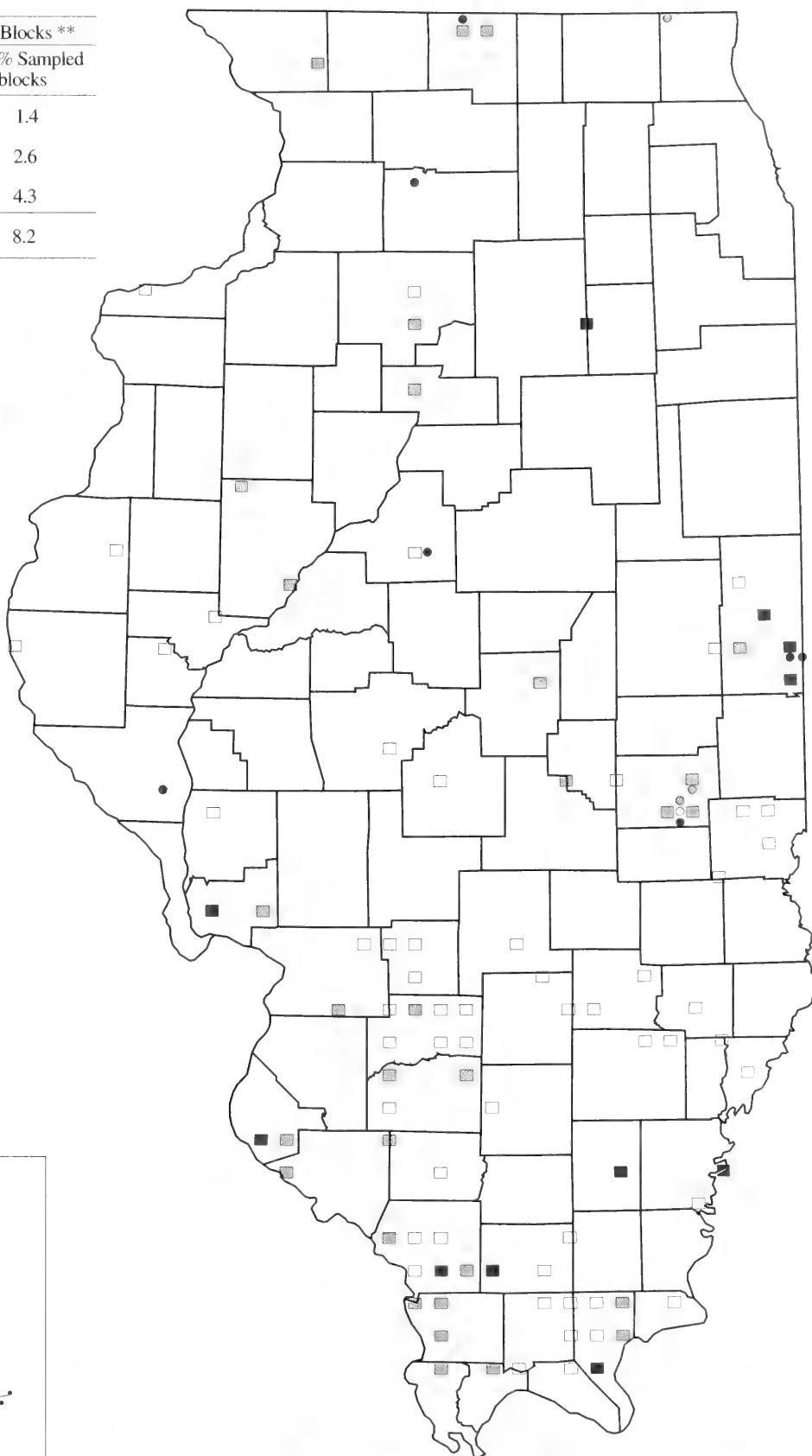


% of 998 sampled priority blocks (gray = no records for this species)

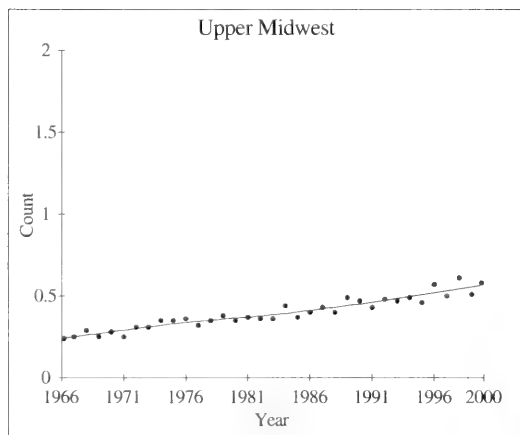


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Yellow-throated Warbler**





Jim Wedge / Cornell Lab of Ornithology

**Code: PIWA**

**Rangewide Distribution:** southeastern Canada and eastern U.S., south to Texas, and in some Caribbean Islands.

**ILLINOIS**

**Abundance:** uncommon migrant, uncommon summer resident in southern Illinois (rare elsewhere), and very rare winter resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** pine forests.

**Nest:** a compact cup of needles and lined with feathers, far out on a limb in a pine tree.

**Eggs:** 4, white to off-white, marked with browns (mostly near the larger end).

**Incubation:** about 10 days.

**Fledging:** about 10 days.

The Pine Warbler generally associates with mature pines but also occurs in mixed coniferous-hardwood forests. It is a common breeder and permanent resident in the southeastern U.S. and breeds as far north as southeastern Canada. It forages slowly through the upper parts of trees and is easily overlooked. Its song is similar to that of the Chipping Sparrow and it often responds to the playing of a Chipping Sparrow recording. Like other wood warblers, Pine Warblers are primarily insectivores, but also regularly eat seeds, such as seeds of pines and seeds at bird feeders (Rodewald et al. 1999). Generally they forage on the foliage and bark of

pines. Nests are well hidden high in pine trees in a dense clump of pine needles near the end of a branch (Rodewald et al. 1999). Because Pine Warblers are dependent on pine forests, commercial logging and fire suppression with a resultant increase in deciduous vegetation can have negative effects on their populations (Rodewald et al. 1999). Over the past thirty years, the Pine Warbler population in the U.S. appears to have increased, according to Breeding Bird Survey data.

**Illinois History**

The primary reference for the early status of Pine Warblers in Illinois comes from Cory (1909), who states that it is “a summer resident in suitable localities.” Graber et al. (1983) report that these warblers “have adapted as breeding birds to the extensive pine plantations of southern Illinois” and that “recent breeding records are lacking for north and central Illinois, notwithstanding extensive pine plantations in some areas (e.g., Mason, Henderson, and Ogle counties).”

**Breeding Bird Survey Trends**

For 1966–2000 the trend estimate for the Pine Warbler population in Illinois is 6.9% per year (nonsignificant,  $P = 0.30$ ), but this species is localized and occurs in small numbers in the state. The data for the upper Midwest indicate an increase in population over the same period of 5.8% per year (significant,  $P < 0.01$ ).

*Credibility Index:* IL = 3 and UM = 1.

**Distribution**

During the atlas project, the Pine Warbler was reported in priority blocks in 11 counties primarily in southern Illinois. The six records in Hamilton, St. Clair, Wabash, LaSalle, and Winnebago counties are outside of the expected nesting range. Adults with young were reported in the 2002 breeding season in mature pines at Sand Ridge State Forest in Mason County (S. Bailey, pers. comm.).

**Frequency**

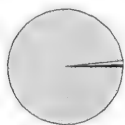
The Pine Warbler was reported from 17 (1.7%) priority blocks and 1 nonpriority block. Breeding was Confirmed in 3 of the priority blocks; adults feeding young was the evidence for all 3 Confirmed records. Pine Warblers can be hard to find even when known to be present and confirmation of breeding for this species requires extreme patience. It is likely that the species bred in most of the southern Illinois blocks in which it was recorded.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	3	0.3	17.6	4	0.3
Probable	4	0.4	23.5	4	0.3
Possible	10	1.0	58.8	10	0.8
Totals	17	1.7	100.0	18	1.4

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



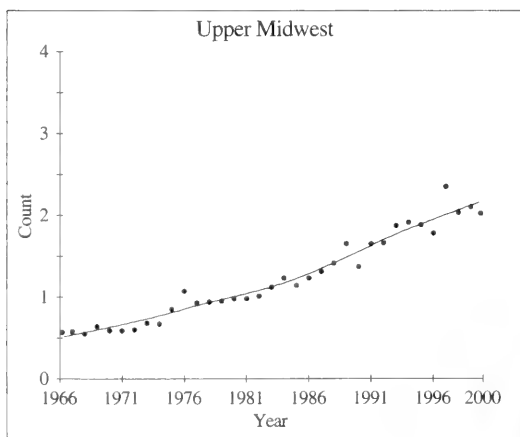
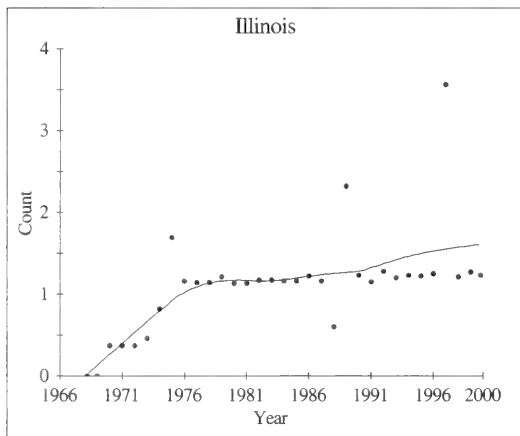
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○

## Breeding Bird Survey Trends



**Pine Warbler**



Joe Milosevich

**Code:** PRAW

**Rangewide Distribution:** eastern North America from extreme southern Ontario, south to the Gulf Coast, eastern Central America, and the Caribbean Islands.

**ILLINOIS**

**Abundance:** common migrant and summer resident in southern Illinois, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** dry brushy clearings, second-growth forests, and abandoned upland fields.

**Nest:** a compact cup of closely felted plant materials, in small tree.

**Eggs:** 4, white to off-white, marked with brown, usually wreathed.

**Incubation:** 12 days.

**Fledging:** from 9 to 10 days.

The Prairie Warbler is a specialist of dry upland shrubby and early successional habitats. These birds are attracted to abandoned fields, pine plantations, forest edges, and hillsides with a scattering of red cedar trees. Areas with poorer soil may provide better long-term benefits for the population than sites with better soils because forest regeneration rates are slower (Graber et al. 1983). They typically nest in shrubs and small trees within 10 feet of the ground. Prairie Warblers are

usually single-brooded. Nests are parasitized by Brown-headed Cowbirds; Nolan (1978) found that 27% (of 336 nests) in a study in Indiana were parasitized. Parasitized nests are often abandoned (Ehrlich et al. 1988). Prairie Warblers breed primarily in the eastern half of the U.S. Their breeding range expanded when former crop fields were abandoned and early successional habitat developed. Prairie Warblers were widespread by the mid-1900s but the population has declined since then in parts of their range (Nolan et al. 1999). Reforestation and decreasing availability of early successional habitat may be factors.

**Illinois History**

In the late 1800s and early 1900s the Prairie Warbler was considered rather rare in Illinois (Cory 1909); however, occasional nests with eggs were found in Cook and adjacent counties during those years. Nolan (1978) stated that breeding Prairie Warblers have been found in 26 Illinois counties.

**Breeding Bird Survey Trends**

The trend estimate for the Prairie Warbler is -6.6% per year (nonsignificant,  $P = 0.50$ ) for Illinois for 1966–2000, but the estimate is based on a small sample size. The population in the upper Midwest declined at an estimated rate of -3.0% per year (significant,  $P < 0.01$ ) from 1966 to 2000.

*Credibility Index:* IL = 3 and UM = 1.

**Distribution**

During the atlas project, Prairie Warblers were reported in priority blocks in 11 counties. They were mainly found in extreme southern Illinois, with a few records in central Illinois. Immediately prior to the atlas project breeding birds were recorded in at least five central Illinois counties as far north as Peoria and McLean counties. There is currently a very small but regular breeding population in Vermilion County (S. Bailey, pers. comm.).

**Frequency**

The Prairie Warbler was reported from 26 (2.6%) priority blocks and 2 nonpriority blocks. Breeding was Confirmed in 4 of the priority blocks. Nesting probably occurred in the majority of blocks in which these warblers were recorded.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	4	0.4	15.4	5	0.4
Probable	5	0.5	19.2	6	0.5
Possible	17	1.7	65.4	17	1.3
Totals	26	2.6	100.0	28	2.2

\* 998 priority blocks

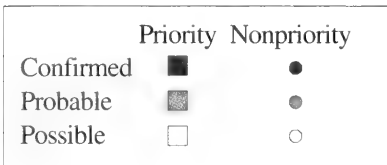
\*\* 1,286 total blocks (priority and nonpriority)



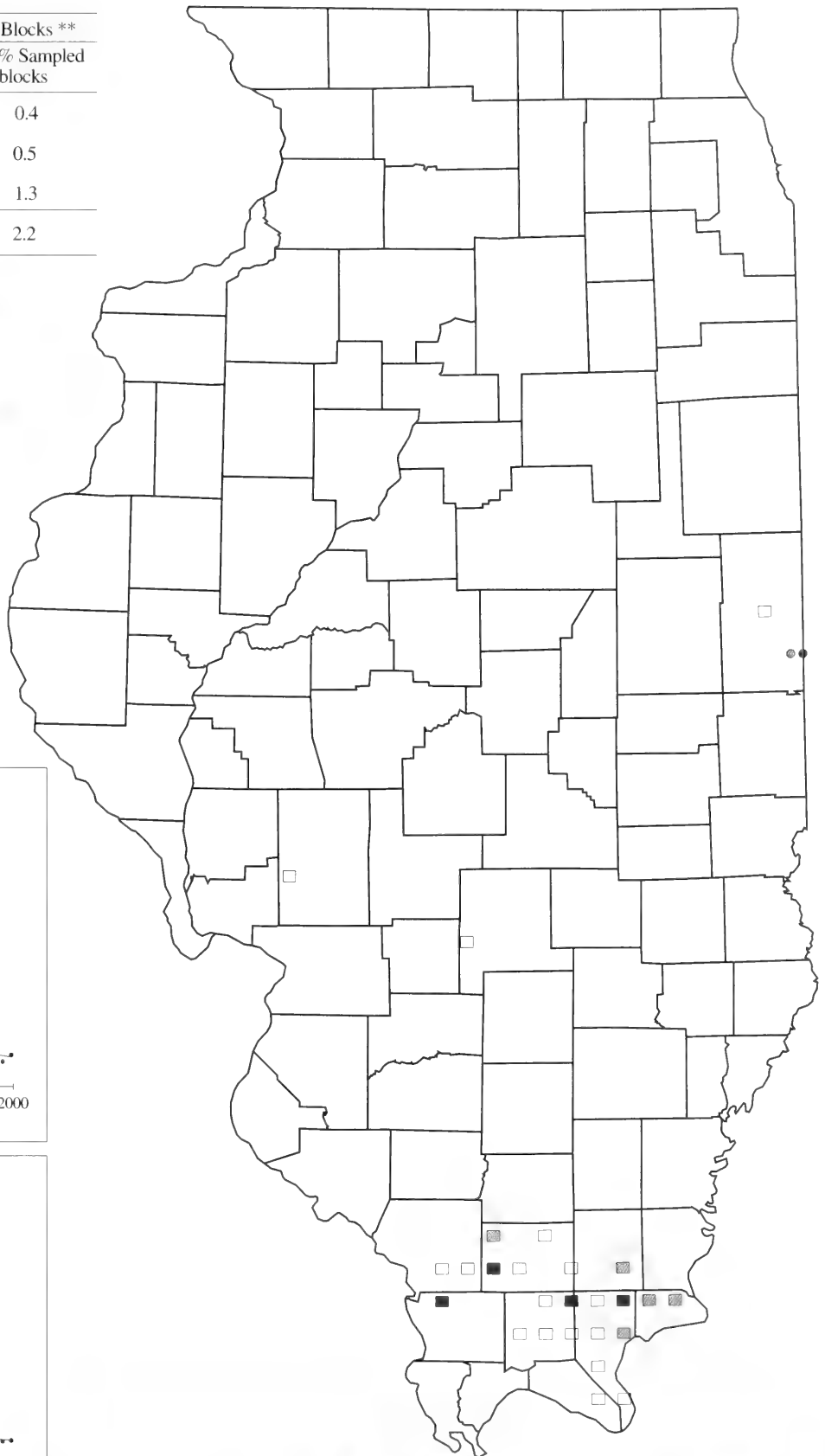
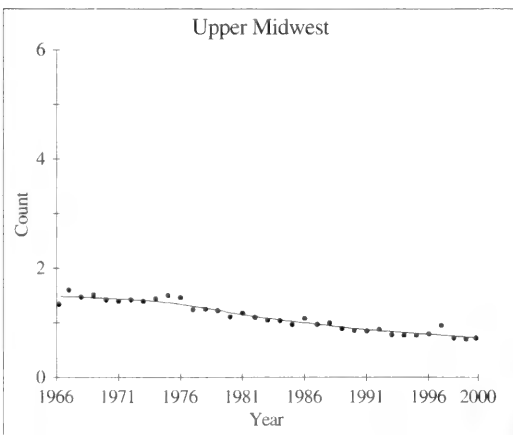
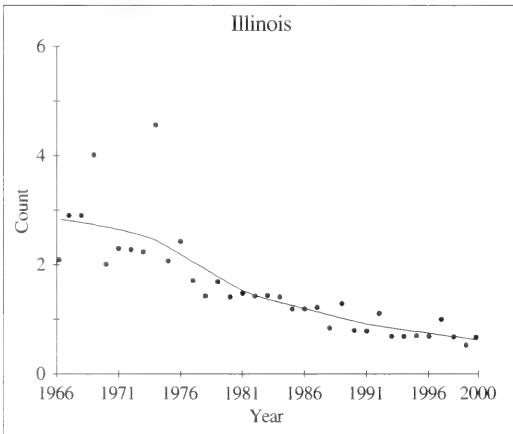
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Prairie Warbler**



Vern Kleen

**Code:** CERW

**Rangewide Distribution:** extreme southern Ontario, the eastern half of the U.S., south to northwestern South America.

**ILLINOIS**

**Abundance:** uncommon migrant and summer resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** mature, deciduous bottomland forests.

**Nest:** a small, compact cup of bark, weed stalks, moss, and lichens lined with moss and hair, in a tree.

**Eggs:** 4, grayish, creamy or greenish white, marked with browns, finely spotted or blotched, usually wreathed.

**Incubation:** 11–12 days.

**Fledging:** not currently known.

The Cerulean Warbler forages for insects high in the canopy of large mature deciduous forests, especially bottomlands. Ceruleans primarily breed in the eastern U.S. north of the southern tier of states. Although the range has remained much the same, the numbers of this species have declined since the early 1900s (Hamel 2000). They were once common in the Mississippi and Ohio River Valleys. In the past three decades the U.S. population has declined, according to Breeding Bird Survey data. The Cerulean Warbler migrates earlier and farther than many other warbler species (Hamel 2000). They nest in the mid-to-upperstory levels. Loss of large unfragmented mature forests, especially along streams, and parasitism by Brown-headed Cowbirds are important factors in the decline of this species (Hamel 2000).

**Illinois History**

In the 1800s the Cerulean Warbler was “by far the most abundant of the summer-resident members of the family in Illinois” (Ridgway 1889). In the early 1900s it was deemed “common in the southern part of the state, but casual or rare in northern Illinois” (Cory 1909). Robinson and Vanderah (Cornell Lab of Ornithology 2000) described the species as currently rare, patchy in distribution, extremely area sensitive, and absent or very rare in most Illinois forests. In this study, Ceruleans were found in only half of the forest stands with at least 500 contiguous acres.

**Breeding Bird Survey Trends**

The trend estimate for Illinois is  $-12.6\%$  per year (nonsignificant,  $P = 0.35$ ) for 1966–2000; however, the species was found on few routes. In the upper Midwest the Cerulean Warbler population declined at  $-5.7\%$  per year (significant,  $P < 0.01$ ) from 1966 to 2000; trend estimates were also negative and significant for the two subinterval time periods of 1966–1979 and 1980–2000.

**Credibility Index:**  $IL = 3$  and  $UM = 2$ .

**Distribution**

Cerulean Warblers were reported in priority blocks in 27 counties and Confirmed in eight of those during the atlas project. The southern and southwestern portions of the state were the main areas where Ceruleans were found, with scattered occurrences in the east-central and northern parts of the state. Data from the Cerulean Warbler Atlas Project (Cornell Lab of Ornithology 2000) indicate a similar distribution, but that project also found moderate populations in Jo Daviess and Ogle counties and small populations in the forests adjacent to the Illinois and Little Wabash rivers. Cerulean Warblers found in White and Hamilton counties during the atlas project were not relocated during surveys conducted from 1992 to 1997 by Robinson and Vanderah (Cornell Lab of Ornithology 2000).

**Frequency**

The Cerulean Warbler was reported from 63 (6.3%) priority blocks and 23 nonpriority blocks. Breeding was Confirmed in 10 (1.0%) of the priority blocks. Because it inhabits the treetops and is difficult to spot, the Cerulean Warbler is mostly detected by its song; however, its song can be confused with that of other warblers. Nesting may have occurred in the majority of the blocks in which these warblers were recorded.

## Breeding Evidence

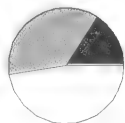
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	10	1.0	15.9	11	0.9
Probable	23	2.3	36.5	34	2.6
Possible	30	3.0	47.6	41	3.2
Totals	63	6.3	100.0	86	6.7

\* 998 priority blocks

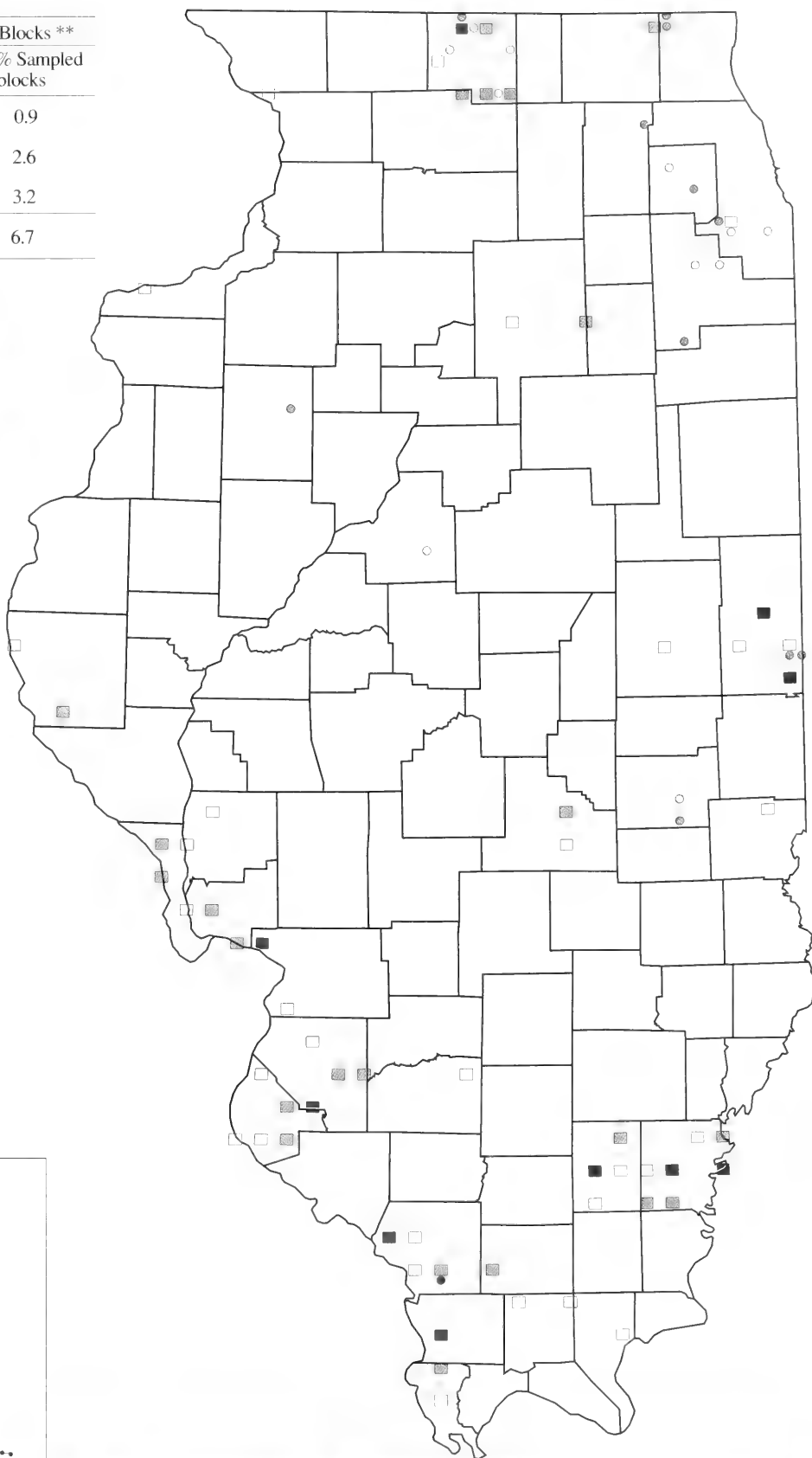
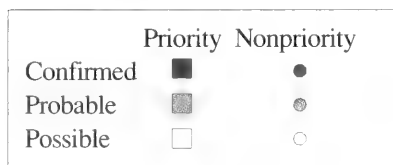
\*\* 1,286 total blocks (priority and nonpriority)



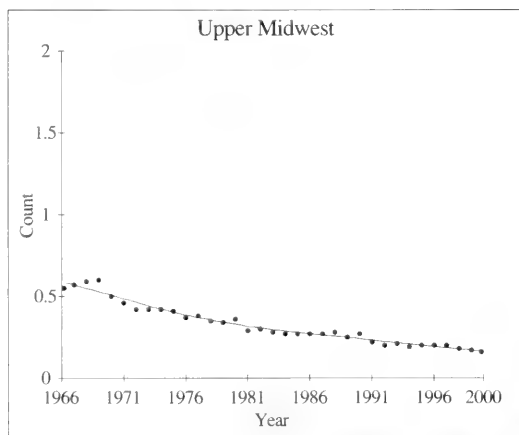
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Cerulean Warbler**



Peter Dring

**Code:** BAWW

**Rangewide Distribution:** central and southeastern Canada and the U.S. east of the Rockies, south through Central America to northwestern South America, and the Caribbean Islands.

**ILLINOIS**

**Abundance:** common migrant and very rare summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous and mixed forests, especially hillsides and ravines.

**Nest:** a concealed cup of leaves and coarse grass lined with finer materials, usually on the ground.

**Eggs:** 5, white to creamy, entirely flecked with brown markings, occasionally wreathed.

**Incubation:** 10 days.

**Fledging:** from 8 to 12 days.

The bold black and white stripes of the Black-and-white Warbler make it hard to confuse with any other species. Its creeper-like behavior of foraging for insects under bark on tree trunks and limbs is unique among North American wood warblers (Kricher 1995). Black-and-white Warblers breed in central and southeastern Canada and east of the Rockies in the U.S. They generally inhabit mature and second-growth deciduous and mixed deciduous-coniferous forests (Kricher

1995). Although common in most wooded habitats during migration, they prefer large tracts of riverine forest with mature trees near swamps or backwater lakes for nesting (Kricher 1995; Noon et al. 1980). They mostly frequent the mid-to-understory levels. Nests are hidden beneath vegetation on the ground next to a shrub, log, or tree, often on a hillside or in a ravine. The male's song is distinctive but high pitched and weak. This species is affected by forest fragmentation and nest parasitism by Brown-headed Cowbirds (Kricher 1995).

**Illinois History**

In the late 1800s and early 1900s the Black-and-white Warbler was considered very common in dry woods (Ridgway 1889) and "may occasionally nest in northern Illinois, but I find no record of its having done so" (Cory 1909). Graber et al. (1983) described the breeding population as very spotty, consistently low, and mostly in the south.

**Breeding Bird Survey Trends**

The scattered and small population of Black-and-white Warblers in Illinois is not adequately sampled by the BBS. The trend estimate for the upper Midwest population is 0.7% per year (nonsignificant,  $P = 0.20$ ) for 1966–2000. *Credibility Index: IL = none and UM = 1.*

**Distribution**

During the atlas project, Black-and-white Warblers were found in priority blocks in 18 counties. Because of their preference for large forested tracts, they were primarily found in southern Illinois, especially in the Shawnee National Forest and along the Kaskaskia River. They were also found at a few locations in northern Illinois.

**Frequency**

The Black-and-white Warbler was reported from 21 (2.1%) priority blocks and 4 nonpriority blocks. Breeding was Confirmed in 3 of the blocks in which it was reported. When present, Black-and-white Warblers were easy to detect and identify by their song and foraging behavior. However, many may have been overlooked because their weak, high-pitched songs are hard to hear. Breeding for this species may also be underreported because nesting occurs at the same time migrants are passing through, especially in southern Illinois. Nesting was difficult to confirm. It is likely that nesting occurred in many of the blocks in which it was recorded, especially in southern Illinois.



## Breeding Evidence

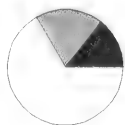
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	3	0.3	14.3	3	0.2
Probable	4	0.4	19.0	5	0.4
Possible	14	1.4	66.7	17	1.3
Totals	21	2.1	100.0	25	1.9

\* 998 priority blocks

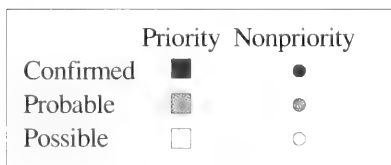
\*\* 1,286 total blocks (priority and nonpriority)



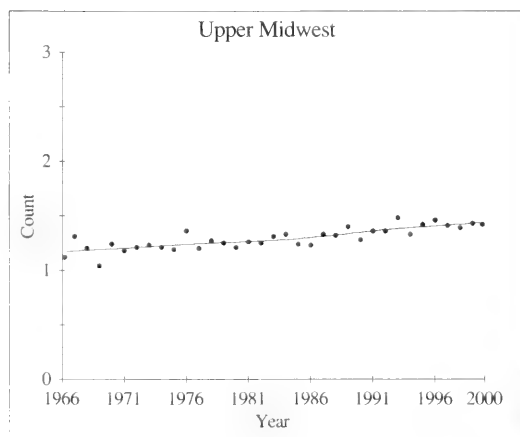
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Black-and-white Warbler**



Joe Milosevich

**Code:** AMRE

**Rangewide Distribution:** western and southern half of Canada, south through the U.S. to northwestern South America, and the Caribbean Islands.

**ILLINOIS**

**Abundance:** common migrant and fairly common summer resident (locally).

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open deciduous and mixed forests, and second-growth, especially in vine-covered trees.

**Nest:** a compact cup of plant fibers, grass, and rootlets ornamented with lichen, birch bark, and feathers and lined with finer materials, in a tree.

**Eggs:** 4, white to off-white, marked with browns, usually wreathed.

**Incubation:** 12 days.

**Fledging:** about 9 days.

The male American Redstart, with its bright orange and black plumage, is easily distinguished from other species. This Neotropical migrant breeds throughout the eastern and northern U.S. and southern and western Canada. Redstarts are inhabitants of open wooded areas, especially moist deciduous second-growth forests with dense, shrubby understories, and prefer large tracts of habitat. Redstarts are insectivores and, like flycatchers, have physical characteristics (i.e., a flattened bill with well-developed rictal bristles, proportionately large wings and tail) that enable them to pursue insects in flight. The redstart's flashy wing and tail patches appear to flush insect prey (Sherry and Holmes

1997). The male's song is a clue to its presence but is often variable and indistinct, sometimes resembling the song of other warbler species. For nesting, redstarts select an upright fork in the upper portion of a shrub or small tree, especially willows, in well-vegetated areas. Brown-headed Cowbirds parasitize redstart nests where they occur together such as in fragmented forests. American Redstart populations have declined in the last half of the 1900s because of the loss of habitat, although not enough to cause changes in overall range (Sherry and Holmes 1997).

**Illinois History**

The American Redstart was described by Cory (1909) as an abundant summer resident in Illinois. However, Ridgway (1889) indicated that it was "by no means a well-known bird to the general observer." Although there are no definitive population data for Illinois to which comparisons can be made, Graber et al. (1983) believed that in recent years the population in Illinois had surely decreased due to loss of riparian forest habitat.

**Breeding Bird Survey Trends**

The trend estimate is  $-8.1\%$  per year (significant,  $P = 0.03$ ) for the American Redstart population in Illinois over the sample period 1966 to 2000; however, the sample size is small and the relative abundance is low. The trend estimate for the upper Midwest population for the same period is estimated at  $0.5\%$  per year (nonsignificant,  $P = 0.44$ ).

**Credibility Index:**  $IL = 3$  and  $UM = 2$ .

**Distribution**

Atlas data indicate that American Redstarts occurred throughout the state, but most notably along major river corridors (especially the Mississippi, Illinois, and Kaskaskia), the northern part of the state, and the southern bottomlands. Redstarts were found in priority blocks in 57 counties and Confirmed in 20 of them. The concentration of records in Hamilton and White counties was unexpected.

**Frequency**

The American Redstart was reported from 124 (12.4%) priority blocks and 38 nonpriority blocks. Breeding was Confirmed in 27 (2.7%) of the priority blocks, most frequently by observation of adults feeding young (16 FY records) followed by fledged young (5 FL records). It is likely that breeding occurred in most blocks in which the species was present.

## Breeding Evidence

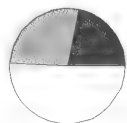
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	27	2.7	21.8	38	3.0
Probable	34	3.4	27.4	48	3.7
Possible	63	6.3	50.8	76	5.9
Totals	124	12.4	100.0	162	12.6

\* 998 priority blocks

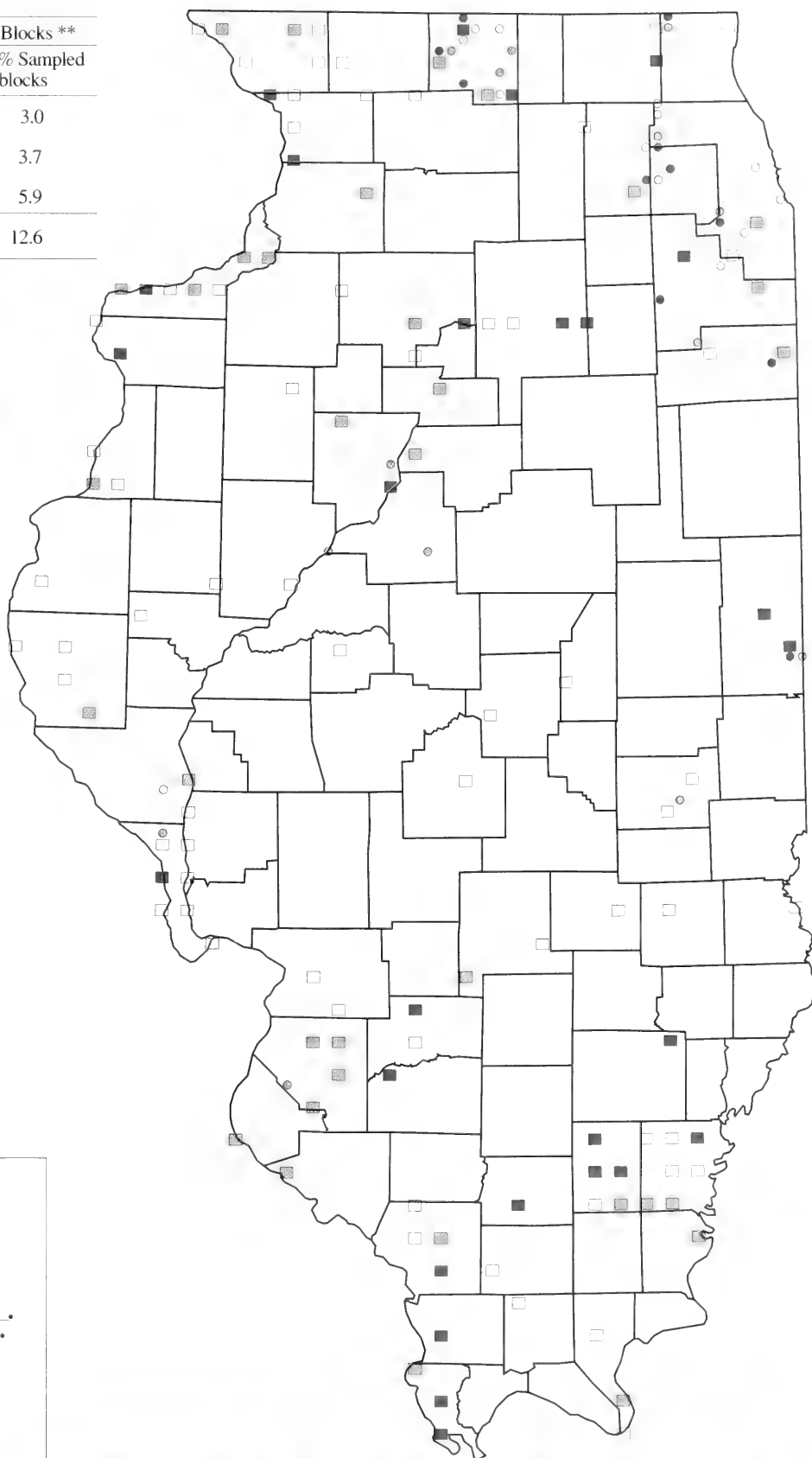
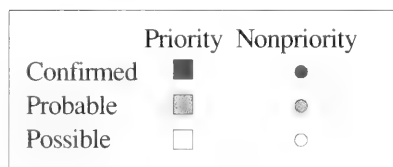
\*\* 1,286 total blocks (priority and nonpriority)



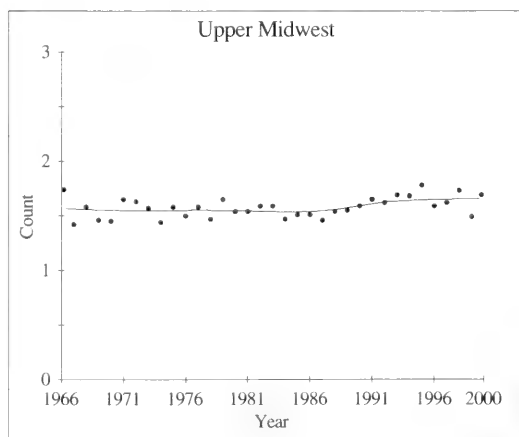
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**American Redstart**



Joe Milosevich

## Code: PROW

**Rangewide Distribution:** eastern half of the U.S., from south of the northern tier of states to northern South America and the Caribbean Islands.

## ILLINOIS

**Abundance:** common migrant and summer resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** swamps and flooded bottomland forests with snags for nesting.

**Nest:** a tree cavity filled with moss, dry leaves, twigs, and bark lined with finer materials; also, nest boxes.

**Eggs:** 4–6, creamy, blotched with browns.

**Incubation:** 12–14 days.

**Fledging:** about 11 days.

The Prothonotary Warbler breeds in the eastern half of the U.S., primarily in the southeastern U.S. This species is named for its bright yellow plumage that resembles the yellow robes of papal clerks (prothonotaries) in the Roman Catholic Church (Petit 1999). It also has a fitting alternate name, the golden swamp warbler, as the Prothonotary is an inhabitant of swamps and bottomland forests. This insectivore spends most of its time foraging in the lower stratum. It usually nests in tree cavities in wooded areas near water, but also regularly utilizes nest boxes placed in appropriate habitat. The Prothonotary is the only wood warbler species in eastern North America that nests in cavities (Jackson et al. 1996). A pair mated in one season may or may not pair with the same mate in the same territory in subsequent seasons (Kleen 1973b). Prothonotary Warblers compete with other cavity-nesting species, such as House Sparrows, European

Starlings, and House Wrens, and nests are frequently parasitized by Brown-headed Cowbirds (Jackson et al. 1996; Petit 1999). The greatest threat on its breeding ground is the loss and degradation of bottomland forests through logging or conversion to agricultural land (Petit 1999).

## Illinois History

Cory (1909) stated that the Prothonotary Warbler was a “common summer resident in Illinois south of the Kankakee River and of irregular occurrence” farther north. Ridgway (1889) noted that it was one of the most abundant birds in the southern half of the state where there were swamps bordered by willow trees. In the late 1800s and early 1900s Prothonotaries were considered common and abundant along the Kankakee River (Graber et al. 1983). They were probably more widespread and numerous prior to settlement when natural bottomlands and swamps were more abundant and less fragmented (Graber et al. 1983). The construction of large reservoirs has affected the Prothonotary population on one hand by destroying natural bottomlands and on the other hand by creating new habitat.

## Breeding Bird Survey Trends

The BBS trend estimate for the Prothonotary Warbler population in Illinois is 0.3% per year (nonsignificant,  $P = 0.79$ ) for 1966–2000. The trend estimate for the upper Midwest is 2.0% per year (nonsignificant,  $P = 0.09$ ) for the same period.

*Credibility Index:* IL = 2 and UM = 2.

## Distribution

The Prothonotary Warbler is strongly associated with the swamps, river corridors, and flooded bottomland forests of Illinois. It is common in the cypress swamps in southern Illinois. During the atlas project, it was most prevalent in the south and recorded only sparingly in the northern half of the state, usually along streams and rivers. It probably occurred at more sites than indicated by the atlas data. It was Confirmed in 33 counties and reported in priority blocks in 58 counties.

## Frequency

The Prothonotary Warbler was reported from 152 (15.2%) priority blocks and 15 nonpriority blocks. Breeding was Confirmed in 54 (5.4%) of the priority blocks, a relatively high percentage for a warbler. Eighty percent of the Confirmed records in priority blocks were observations of adults feeding young (26 FY records) or occupied nests (17 ON records). It is likely that Prothonotary Warblers nested in most of the blocks in which they were recorded.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	54	5.4	35.5	64	5.0
Probable	47	4.7	30.9	49	3.8
Possible	51	5.1	33.6	54	4.2
Totals	152	15.2	100.0	167	13.0

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

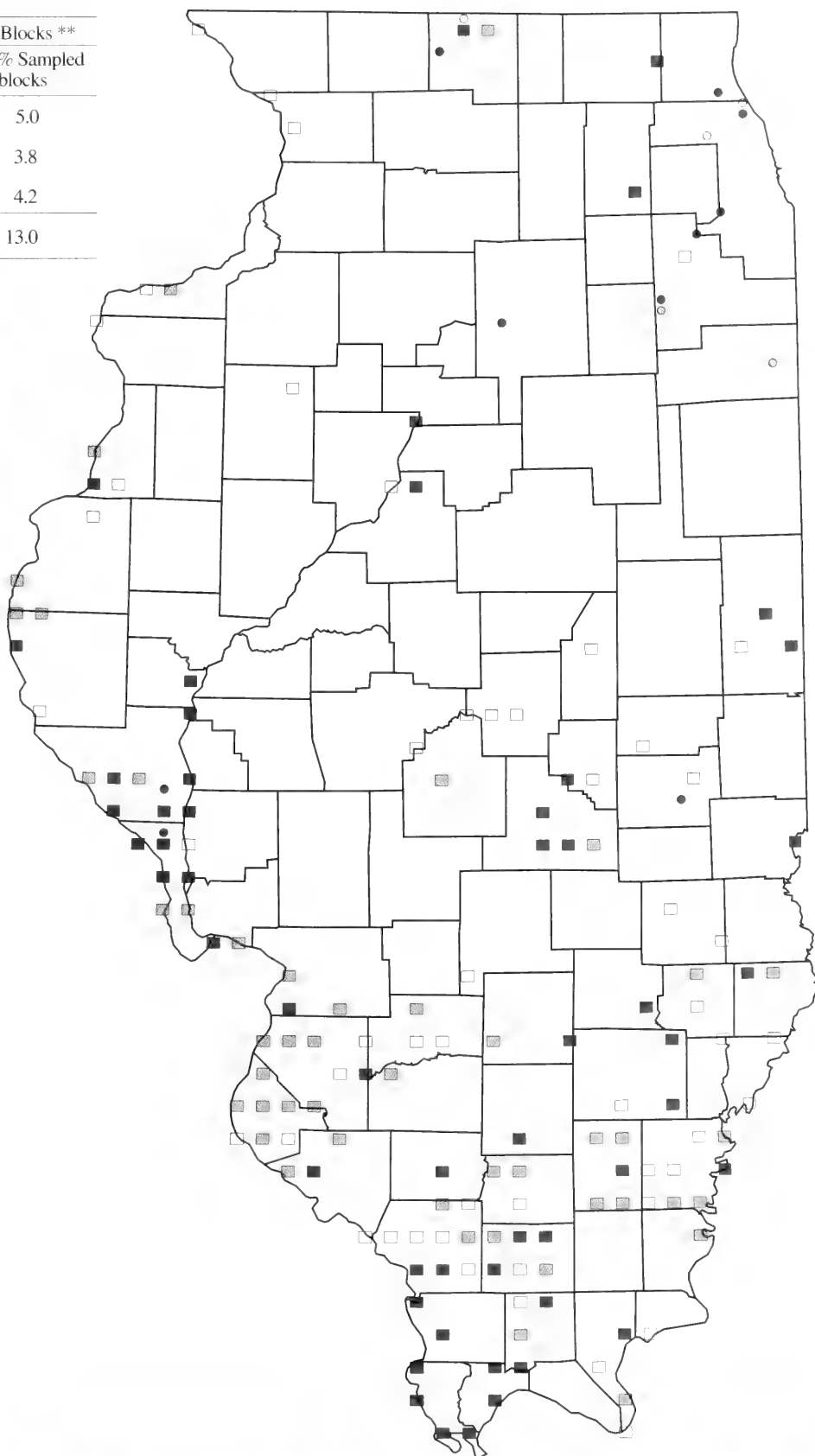


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Prothonotary Warbler**



Richard Day / Daybreak Imagery

**Code:** WEWA

**Rangewide Distribution:** eastern half of the U.S., south of the northernmost states to Panama, and the Caribbean Islands.

**ILLINOIS**

**Abundance:** common migrant and summer resident in south, uncommon in central and rare in north.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** extensive, mature, undisturbed deciduous forests with hillsides and ravines.

**Nest:** a cup of skeletonized leaves lined with finer materials and mycelia of fungi, on ground.

**Eggs:** 4–5, white, marked with browns in weak spots to heavy blotches, usually wreathed.

**Incubation:** 13 days.

**Fledging:** 10 days.

The Worm-eating Warbler, named for its habit of eating caterpillars, is an inconspicuous bird found in large tracts of forest on hillsides and ravines with dense shrub understories. It breeds in the eastern U.S., generally locally where suitable habitat is found. Among North American songbirds, this warbler is probably one of the most sensitive to forest fragmentation (Hanners and Patton 1998). It sings a Chip-ping Sparrow-like song from the midstory level and forages

for insects on leaves on or near the ground. Worm-eating Warbler nests are built on the ground, usually on a hillside, and are well hidden under dead leaves. Destruction and fragmentation of large tracts of forest in both its breeding and wintering ranges are the main threats to this species (Hanners and Patton 1998).

**Illinois History**

Ridgway (1889) stated that in “suitable localities in southern Illinois, the Worm-eating Warbler is a common species; but in the northern portion of the state it appears to be very rare.” Cory (1909) reiterates Ridgway’s evaluation of this species. Graber et al. (1983) indicated that there were no available data to judge whether the population is changing or not. This species, which is highly dependent on large contiguous blocks of unfragmented forest (Robbins et al. 1989), must be less common now than prior to the clearing of the forests by settlers in the 1800s.

**Breeding Bird Survey Trends**

The Worm-eating Warbler is found on so few BBS routes in the state and the region that the reliability of the trend estimates is low. The trend estimates for 1966–2000 for Illinois and the upper Midwest are 4.6% per year (nonsignificant,  $P = 0.66$ ) and 3.1% per year (nonsignificant,  $P = 0.16$ ), respectively.

**Credibility Index:**  $IL = 3$  and  $UM = 3$ .

**Distribution**

The Worm-eating Warbler had a very limited distribution during the atlas project. Because of its habitat requirements, this warbler is limited to the larger hillside areas of the Shawnee National Forest, and a few of the larger forested sites farther north, such as Forest Glen in Vermilion County, Siloam Springs State Park in Adams and Brown counties, and Pere Marquette State Park in Jersey County, though it was not reported at the latter site during the atlas project. It was found in priority blocks in 18 counties, with Confirmed breeding in 8.

**Frequency**

The Worm-eating Warbler was reported from 31 (3.1%) priority blocks and 3 nonpriority blocks. Breeding was Confirmed in 10 (1.0%) of the priority blocks. It is difficult to confirm breeding; Worm-eating Warblers likely nested in most of the blocks in which they were recorded.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	10	1.0	32.3	10	0.8
Probable	8	0.8	25.8	11	0.9
Possible	13	1.3	41.9	13	1.0
Totals	31	3.1	100.0	34	2.6

\* 998 priority blocks

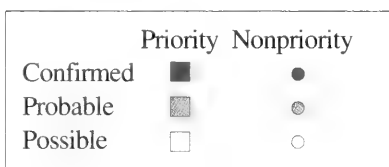
\*\* 1,286 total blocks (priority and nonpriority)



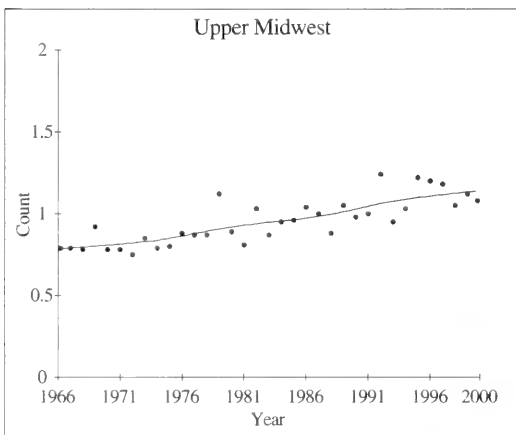
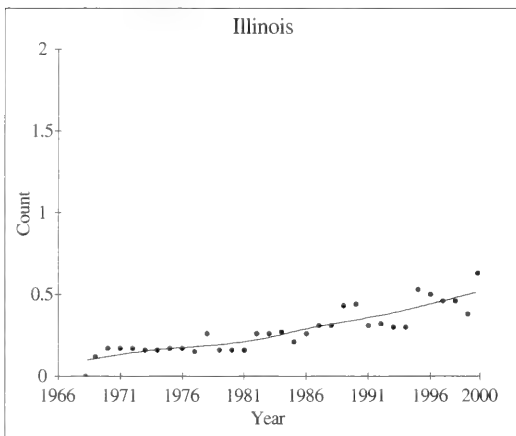
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Worm-eating Warbler**





Vern Kleen

**Code:** SWWA

**Rangewide Distribution:** southeastern U.S., south to southeastern Mexico, and the Caribbean islands.

**ILLINOIS**

**Abundance:** very rare migrant and summer resident in the southern tip of Illinois.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** moist bottomland forests with canebrakes and dense thickets.

**Nest:** a bulky cup of leaves lined with finer materials, in dense cane or shrub.

**Eggs:** 3, white with occasional (faint) speckling.

**Incubation:** 13–15 days.

**Fledging:** from 10 to 12 days.

The Swainson's Warbler is a medium-sized brown warbler with a long, heavy bill. It breeds primarily in the southeastern U.S. where it inhabits swamps and bottomland forests along rivers and streams, preferring shaded areas with fairly dense understory. It is associated with dense stands of giant cane (Eddleman 1978; Eddleman et al. 1980). Nests are concealed at the edge of dense stands of cane or in vines, often near water. Swainson's Warblers are difficult to observe because of the dense habitat and their secretive behavior. The decline in availability and quality of bottomland hardwood forests and the loss of large areas of cane threaten the future of this species.

**Illinois History**

The Swainson's Warbler has apparently always been rare in Illinois. Neither Ridgway (1889) nor Cory (1909) knew much about it; however, Cory felt that it "undoubtedly occurs in the southern portion of the state." The first evidence of nesting was reported in southern Jackson County during the early 1950s (Hardy 1955) and formally documented in 1966 (George 1972). During the spring of 1973, this species was found in breeding habitat at four new sites in southern Illinois (Kleen and Bush 1973). With the harvesting of bottomland forests and loss of giant cane stands during the severe winters of the late 1970s, breeding Swainson's Warblers disappeared from the state by the early 1990s. Because of a low population level and its specialized habitat requirements, the Swainson's Warbler was initially listed as a threatened species in Illinois in 1977; it was reclassified to endangered in 1989 because of its diminished habitat and nearly extirpated population. It has not been reliably reported from any of its former breeding sites or in any other potential breeding habitat since the late 1980s. Regeneration of the southern Illinois canebrakes and preservation of large bottomland forests tracts are necessary for this species to breed again in Illinois (Herkert 1992).

**Breeding Bird Survey Trends**

There are no trend estimates for this species in Illinois or the upper Midwest. The Swainson's Warbler is more typically found in the southeastern states, where the trend for 1966–2000 is estimated at 2.6% (nonsignificant,  $P = 0.15$ ).

*Credibility Index:* IL = none and UM = none.

**Distribution**

The Swainson's Warbler occurred in the large contiguous stands of bottomland forest in southern Illinois that are moist, shady, close to water, and support large dense stands of giant cane. Southern Illinois is at the northernmost edge of its breeding range and is the only known breeding area in the state. The lone atlas record was in Jackson County, its last known breeding site.

**Frequency**

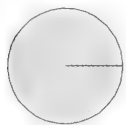
The Swainson's Warbler was reported from a single block (0.1%), a priority block in Jackson County where it was reported as a Possible breeder. Although the male Swainson's Warbler has a loud, ringing song, other species (e.g., Hooded Warbler) have songs so similar that they are often mistaken for the Swainson's Warbler. The most reliable records are those where the bird is visually observed.

## Breeding Evidence

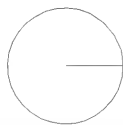
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	0	0.0	0.0	0	0.0
Probable	0	0.0	0.0	0	0.0
Possible	1	0.1	100.0	1	0.1
Totals	1	0.1	100.0	1	0.1

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	▨	◐
Possible	□	○



**Swainson's Warbler**



Todd Fink / Daybreak Imagery

**Code: OVEN**

**Rangewide Distribution:** central and eastern regions of southern Canada, south through central and eastern U.S. to northwestern South America, and the Caribbean islands.

**ILLINOIS**

**Abundance:** common migrant, uncommon summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** large, mature deciduous forests; occasionally mixed forests.

**Nest:** oven-shaped consisting of dry grass, leaves, and moss lined with hair, in open on ground.

**Eggs:** 4–5, white, marked with browns or gray, usually wreathed.

**Incubation:** 11–13 days.

**Fledging:** from 8 to 10 days.

The Ovenbird is a forest interior species and, like many species of wood warblers, requires large, contiguous deciduous forests; it is also very sensitive to forest fragmentation. The breeding range of the Ovenbird is generally east of the Rockies and includes southern Canada and the U.S. north of the southernmost states. Its primary song is a loud “Teacher, TEACHER, TEACHER.” Ovenbirds spend most of their time on or near the forest floor foraging in the leaf litter for insects and other invertebrates. The name Ovenbird is derived from its dome shaped nest of grass and leaves that resembles a Dutch oven. Their nests are placed on the

ground and are often parasitized by Brown-headed Cowbirds. Reproductive success has been found to be lower in nests closer to forest edges (Van Horn and Donovan 1994) and males with territories near edges are frequently not successful in attracting mates (Van Horn 1990). Populations are negatively impacted by forest fragmentation, which results in increased nest parasitism and predation (Van Horn and Donovan 1994). Over the past three decades the North American population has increased, according to Breeding Bird Survey data.

**Illinois History**

The Ovenbird was considered by both Ridgway (1889) and Cory (1909) to be a common summer resident in Illinois woodlands. There is little historical information about the breeding population in Illinois except that they were believed to be more common in northern than southern Illinois. In southern Illinois, Ovenbirds were likely present throughout the 1900s but the population in most years was well below that reported by Ridgway in the late 1800s (Graber et al. 1983).

**Breeding Bird Survey Trends**

The trend for the Ovenbird population in Illinois is estimated at –16.5% per year (nonsignificant,  $P = 0.16$ ) for 1966–2000; sample size and relative abundance are low. The upper Midwest population increased at a rate of 0.9% per year (significant,  $P < 0.01$ ) from 1966 to 2000.

**Credibility Index:** IL = 3 and UM = 1.

**Distribution**

Although Ovenbirds are known to breed throughout the state, their distribution has always been spotty and this was the case during the atlas project. This species was reported in priority blocks in 41 counties and Confirmed as breeding in 7 of them. Graber et al. (1983) expected Ovenbirds to breed in every Illinois county. However, the absence of large contiguous forests may preclude breeding in some counties.

**Frequency**

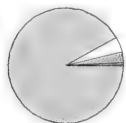
The Ovenbird was reported from 81 (8.1%) priority blocks and 41 nonpriority blocks. It is difficult to confirm breeding for this species. Of the eight Confirmed records in priority blocks, there were two records each for fledged young, adults feeding young, and nest with young (FL, FY, and NY, respectively). It is likely that Ovenbirds were present but not found in several blocks.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	8	0.8	9.9	18	1.4
Probable	30	3.0	37.0	47	3.7
Possible	43	4.3	53.1	57	4.4
Totals	81	8.1	100.0	122	9.5

\* 998 priority blocks

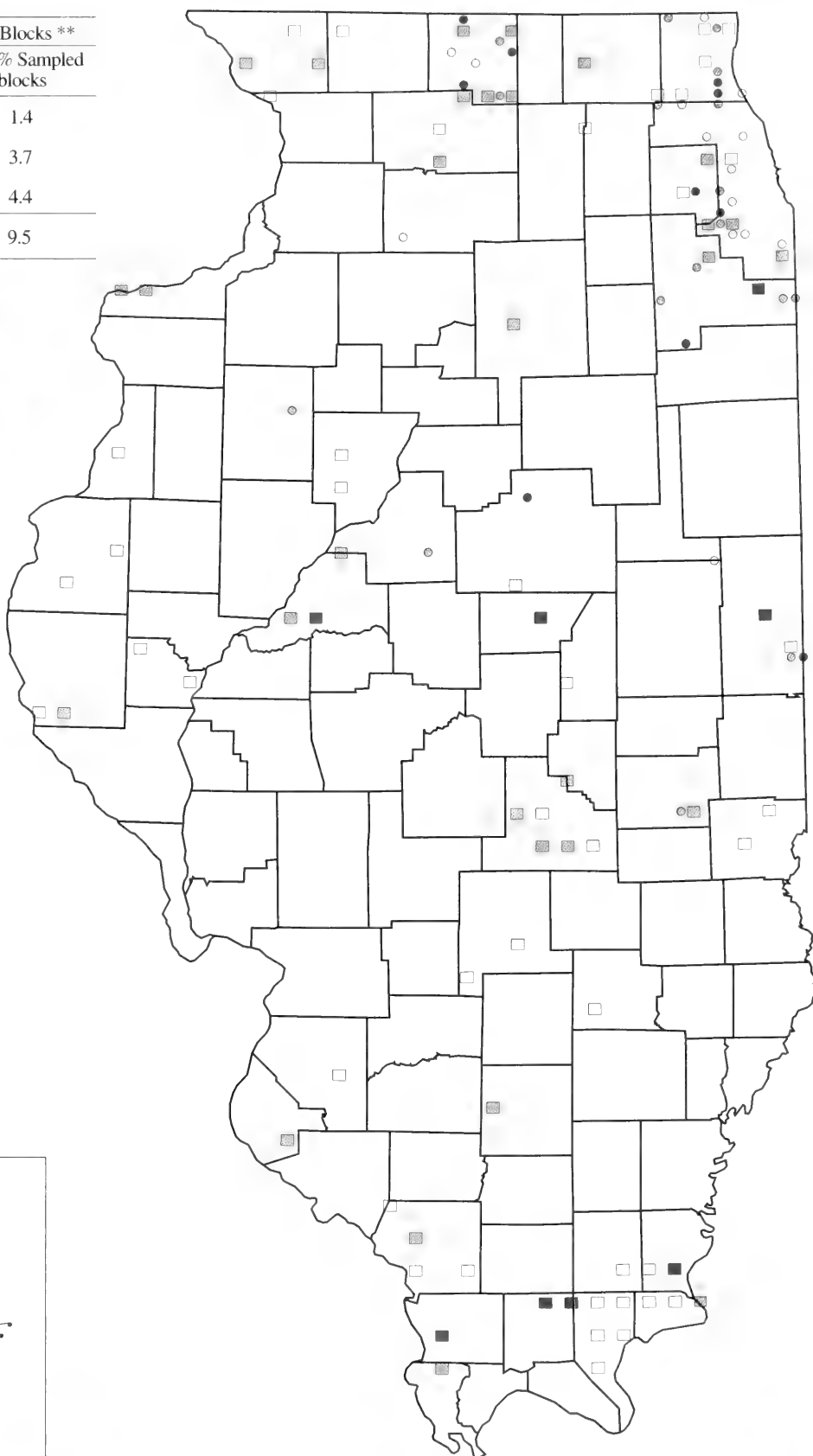
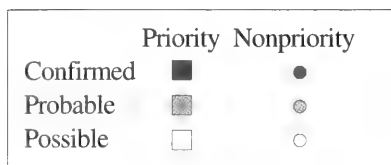
\*\* 1,286 total blocks (priority and nonpriority)



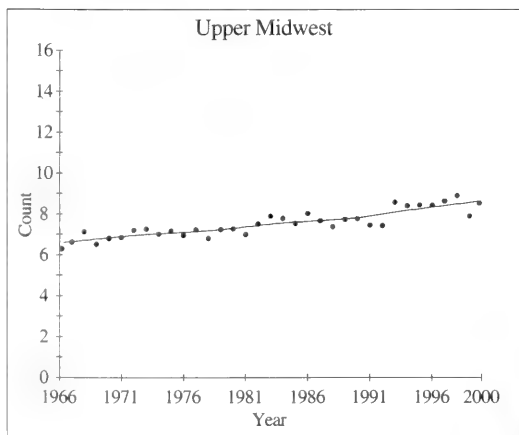
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Ovenbird**



Joe Milosevich

**Code:** LOWA

**Rangewide Distribution:** eastern half of the U.S., south through Mexico to Panama, and on the Caribbean islands.

**ILLINOIS**

**Abundance:** fairly common migrant and summer resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** forested streambanks.

**Nest:** a cup of leaves, moss, twigs, and inner bark lined with finer materials, on ground amidst roots by streambank.

**Eggs:** 5, white to creamy, marked with light to heavy splotches of browns or purplish gray.

**Incubation:** 13 days.

**Fledging:** about 10 days.

The Louisiana Waterthrush is a riparian wood warbler typically associated with the southeastern U.S., although it breeds in much of the eastern U.S. The breeding range has expanded into the northeastern U.S., perhaps in response to reforestation of former agricultural fields since the early 1900s (Robinson 1995). The Louisiana Waterthrush is a timid species found in or along small streams in large forests and occasionally in swamps. The male's loud, clear, and ringing song emanating from the understory is the best way to detect the bird's presence. This species spends much of its time walking on the ground along the water's edge or on rocks in the water in a manner similar to the Spotted Sandpiper in search of invertebrates; it also shares the sandpiper's head- and tail-bobbing behavior. It usually selects a hollow in the dense root system of a windblown tree or a log along a

stream bank for nesting (Eaton 1958; Robinson 1990); nests are vulnerable to flooding. Louisiana Waterthrushes are frequent victims of parasitism by Brown-headed Cowbirds; parasitism rates ranging from 33 to 81% have been found in southern Illinois (Robinson 1995). Like most other Neotropical migrants, this species raises a single brood per season.

**Illinois History**

The Louisiana Waterthrush was considered by Ridgway (1889) to be "an abundant bird in all swampy wooded locations throughout the State, although much less numerous in the extreme northern than in the more southern counties." Two decades later it was reported to be "a common summer resident in southern Illinois, and of casual occurrence in parts of northern Illinois" (Cory 1909).

**Breeding Bird Survey Trends**

In Illinois the population trend is estimated at 24.2% per year (nonsignificant,  $P = 0.07$ ) for the Louisiana Waterthrush, but the BBS does not adequately sample this forest interior species. For the upper Midwest the data indicate a population increase of 5.1% per year (significant,  $P < 0.01$ ) from 1966 to 2000.

*Credibility Index:* IL = 3 and UM = 2.

**Distribution**

The distribution pattern of the Louisiana Waterthrush during the atlas project was similar to that reported a century ago (Cory 1909), that is, they were most frequently encountered in the southern zone and less frequently northward. It was reported in priority blocks in 49 counties and Confirmed as breeding in 23. It is not common anywhere, except possibly the Shawnee Hills region in far southern Illinois. This species is known to occur at Mississippi Palisades State Park in Carroll County but was not found as part of the atlas project at that site.

**Frequency**

The Louisiana Waterthrush was reported from 111 (11.1%) priority blocks and 18 nonpriority blocks. Breeding was Confirmed in 33 (3.3%) of the priority blocks. Like other difficult-to-observe warblers, the Louisiana Waterthrush was not an easy species to confirm. Breeding evidence for two-thirds of the Confirmed records in priority blocks was observation of adults feeding young (22 FY records). It is likely that Louisiana Waterthrushes nested in most blocks in which they were recorded.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	33	3.3	29.7	38	3.0
Probable	31	3.1	27.9	40	3.1
Possible	47	4.7	42.3	51	4.0
Totals	111	11.1	100.0	129	10.0

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

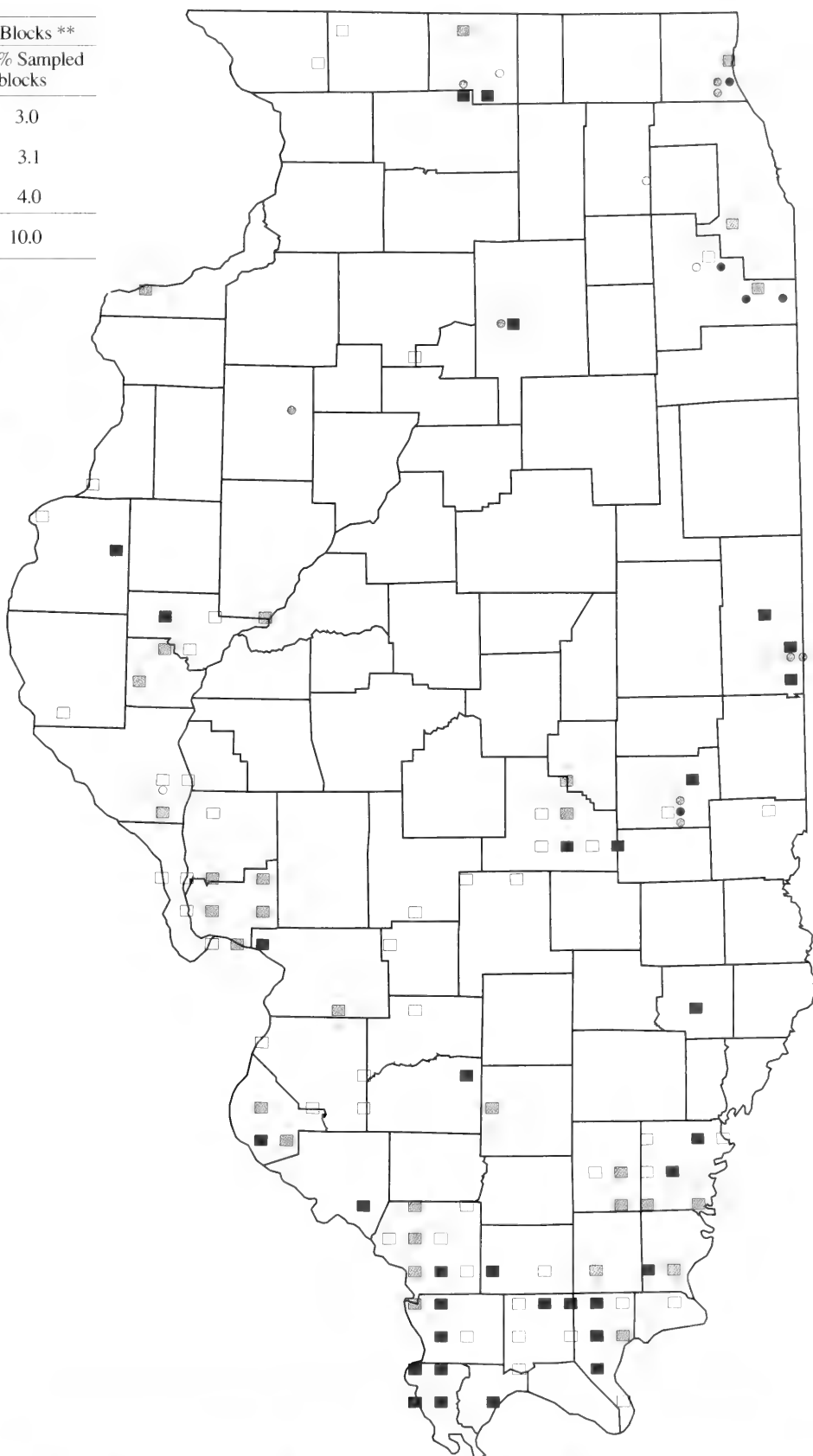


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Louisiana Waterthrush**



Joe Milosevich

**Code: KEWA**

**Rangewide Distribution:** eastern half of the U.S. except northernmost states, south through Central America to northern South America.

**ILLINOIS**

**Abundance:** common migrant and summer resident in southern Illinois, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous and mixed forests with dense undergrowth.

**Nest:** a cup of weed stems, leaves, and grass lined with rootlets and hair, on or very near the ground.

**Eggs:** 4–5, white to creamy, marked with spots or blotches of browns.

**Incubation:** 12–13 days.

**Fledging:** from 8 to 10 days.

Kentucky Warblers breed primarily in the southeastern U.S. but their range expanded northward in the 1900s (McDonald 1998). This warbler is a forest interior species that requires large, unfragmented blocks of deciduous forests. Its preferred habitat is forests with a dense understory and well-developed ground cover layer (McDonald 1998). In Missouri Gibbs and Faaborg (1990) found that a forest block with a minimum of approximately 1,200 acres and a dense understory is essential for successful breeding. The male's loud song is similar to that of the Carolina Wren; even singing birds are difficult to locate. Nests, which are placed on the

ground, are commonly parasitized by Brown-headed Cowbirds (Bohlen 1989). Fragmented forests, with their increased edge, benefit Brown-headed Cowbirds at the expense of Kentucky Warblers as well as many other forest species. The North American population has declined over the past three decades, according to Breeding Bird Survey data.

**Illinois History**

A century ago Ridgway (1889) stated that the Kentucky Warbler was "one of the most abundant of birds in the rich woods of southern Illinois." Cory (1909) considered this species a common summer resident in southern Illinois, but rare in the northern part of the state. Its breeding range may have slowly expanded northward since the late 1800s (Graber et al. 1983). In southern Illinois, Graber et al. (1983) found the highest densities in upland forests.

**Breeding Bird Survey Trends**

From 1966 to 2000 the population trend estimates are 0.6% per year (nonsignificant,  $P = 0.73$ ) and 0.9% per year (nonsignificant,  $P = 0.16$ ) for Illinois and the upper Midwest, respectively.

*Credibility Index:* IL = 2 and UM = 1.

**Distribution**

During the atlas project, Kentucky Warblers were Confirmed as breeding in priority blocks in 27 counties and reported in priority blocks in a total of 74 counties. They were most frequently encountered in the more heavily forested south. Outside of the southern part of the state, Kentucky Warblers were concentrated along the larger rivers, that is, the lower Illinois, Kaskaskia, and Vermilion.

**Frequency**

The Kentucky Warbler was reported from 207 (20.7%) priority blocks and 17 nonpriority blocks. Breeding was Confirmed in 40 (4.0%) of the priority blocks, mostly by observations of adults feeding young (22 FY records) and fledged young (10 FL records). This species was Confirmed in 19% of the 207 priority blocks in which it was reported, which is a relatively low rate of confirmation. While the Kentucky Warbler is vocal, it is secretive and remains hidden in vegetation near the ground. It is likely that these warblers nested in most blocks in which they were recorded.



## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	40	4.0	19.3	46	3.6
Probable	64	6.4	30.9	73	5.7
Possible	103	10.3	49.8	105	8.2
Totals	207	20.7	100.0	224	17.4

\* 998 priority blocks

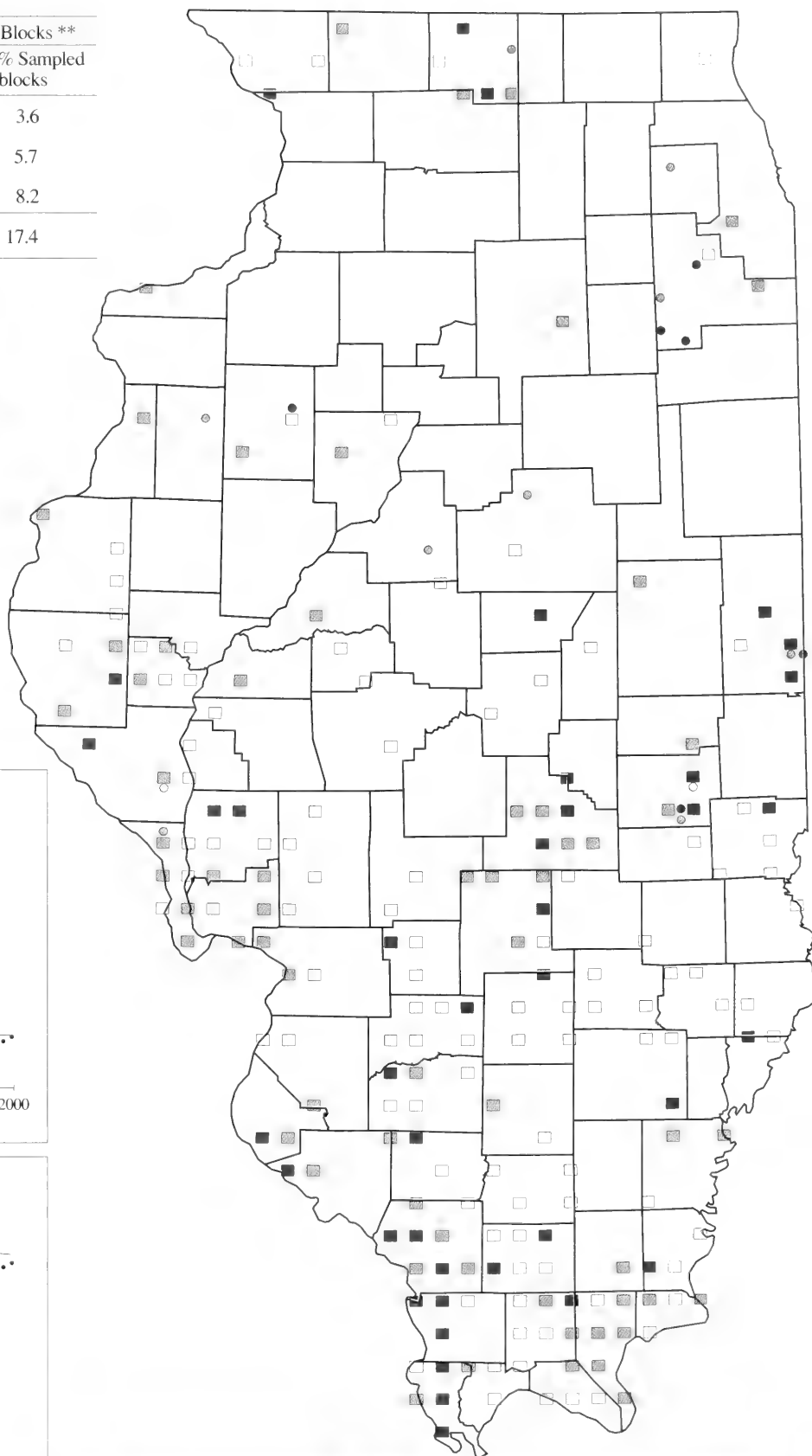
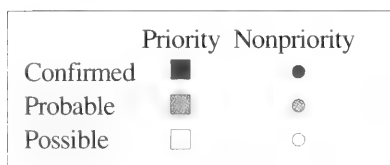
\*\* 1,286 total blocks (priority and nonpriority)



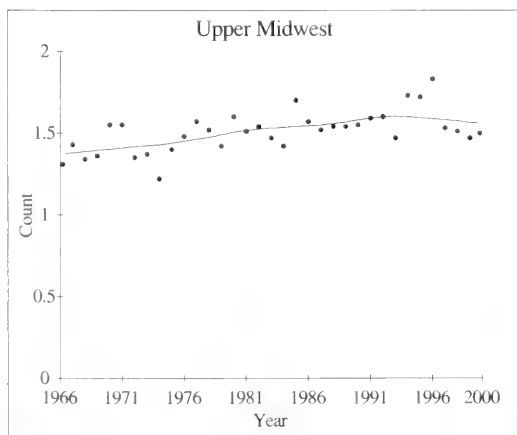
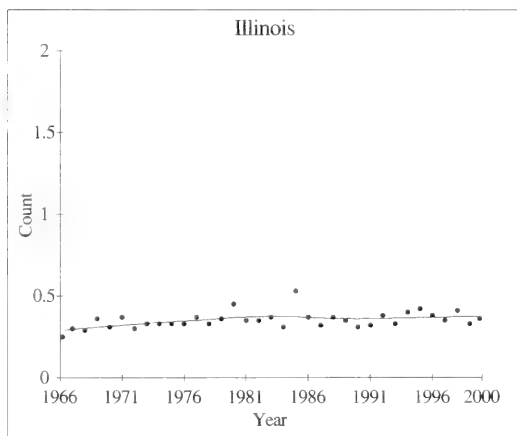
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Kentucky Warbler**



Vern Kleen

**Code:** MOWA

**Rangewide Distribution:** south-central and southeastern Canada, south through the eastern U.S. to northwestern South America.

**ILLINOIS**

**Abundance:** uncommon migrant and very rare summer resident in the northeast.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** wet, dense shrubbery in open deciduous woods, bogs, marsh edges, and regenerating clearcuts in forests.

**Nest:** a cup of weed stems, grass, and leaves lined with fine plant material, on or near the ground.

**Eggs:** 3–4, white to creamy, marked in browns from fine spots to strong blotches.

**Incubation:** 12 days.

**Fledging:** not currently known.

The Mourning Warbler breeds in the northeastern U.S. and the central and eastern regions of southern Canada. It is a secretive species of dense shrubbery and thickets that stays hidden and close to the ground. Preferred habitat is moist brushy woodlands and disturbed second-growth areas. Mourning Warblers benefit from alterations to the environment that open up for-

ests and create areas of brushy second-growth, such as logging and road building (Pitochelli 1993). Nests are built on or near the ground in dense vegetation and are difficult to find. Mourning Warblers are among the latest migrants to return to their nesting grounds each spring and therefore get a late start on the breeding season. The male's territorial song is a loud and distinctive "churee, churee, churee." On the breeding grounds Mourning Warblers are primarily insectivores, usually foraging on shrubs close to the ground.

**Illinois History**

Neither Ridgway (1889) nor Cory (1909) reference nesting for the Mourning Warbler. The first published record was of a nesting pair feeding a young cowbird in the Chicago area in 1935 (Pitelka 1939). In Illinois the current distribution of breeding Mourning Warblers is spotty and irregular. Small populations (4 territories and 5 nesting pairs) were found in widely separated locations in Lake County a few years prior to the atlas project (Kleen 1977; Kleen 1982). Breeding birds have also recently been found at Lowden-Miller State Forest in Ogle County in dense blackberry thickets in recent forest clearcuts (S. Bailey, pers. comm.).

**Breeding Bird Survey Trends**

In Illinois the Mourning Warbler population is very small and not adequately sampled by the BBS. In the upper Midwest the trend for 1966–2000 is estimated at 0.5% per year (nonsignificant,  $P = 0.42$ ).

*Credibility Index:* IL = none and UM = 1.

**Distribution**

Illinois is at the extreme southwestern edge of the Mourning Warbler's breeding range. During the atlas project, this species was found in priority blocks in three counties in the northeastern part of the state. Graber et al. (1983) suggested that it could occur in all the northern counties.

**Frequency**

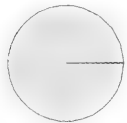
The Mourning Warbler was reported from 3 (0.3%) priority blocks and 5 nonpriority blocks. Breeding was not Confirmed in any priority or nonpriority block. The 3 priority block records were of singing males. Mourning Warblers are late migrants, often not arriving until June. Some of the records for this species may have been late migrants.

## Breeding Evidence

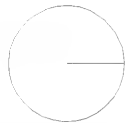
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	0	0.0	0.0	0	0.0
Probable	0	0.0	0.0	1	0.1
Possible	3	0.3	100.0	7	0.5
Totals	3	0.3	100.0	8	0.6

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

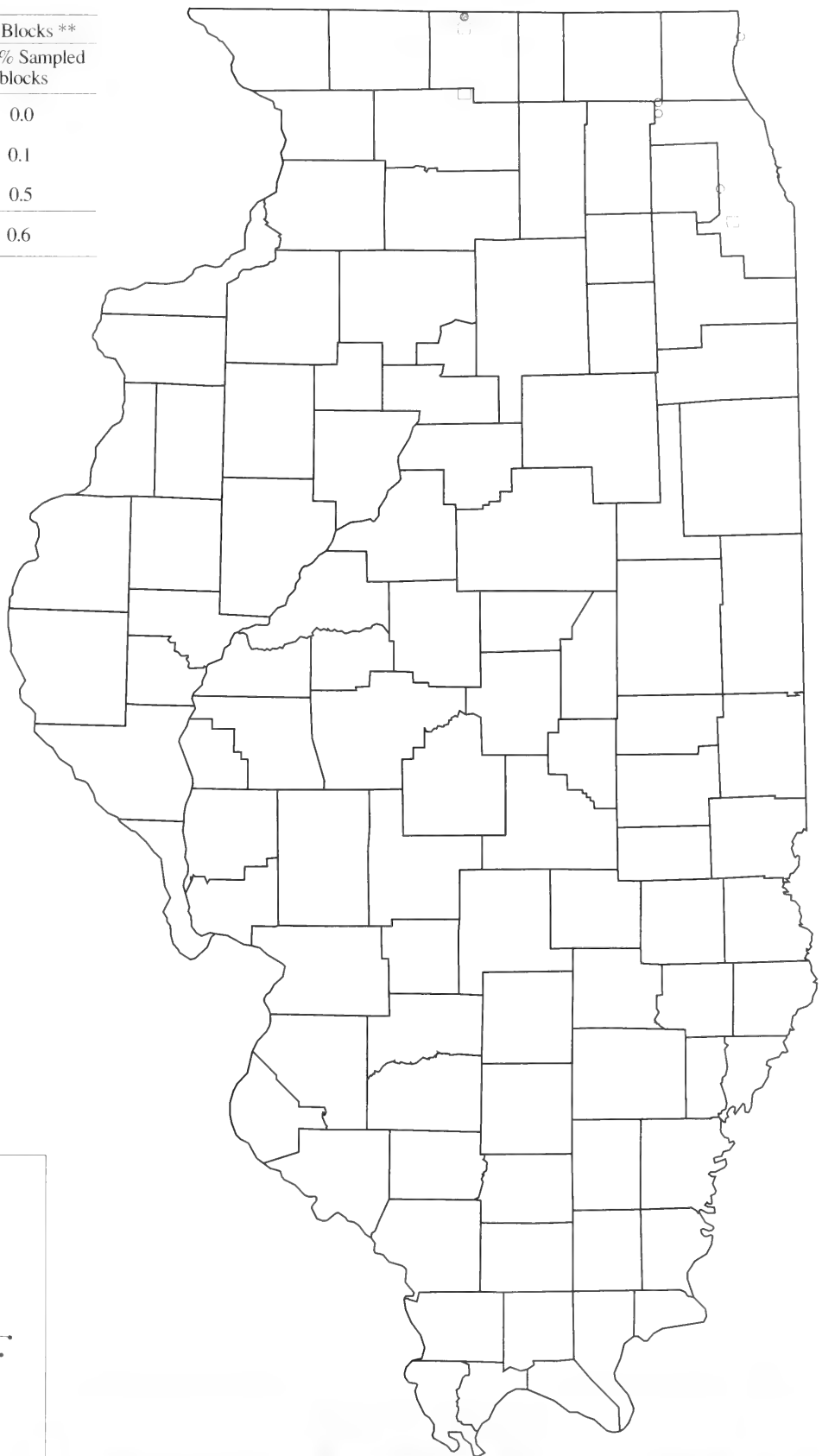


% of 998 sampled priority blocks (gray = no records for this species)

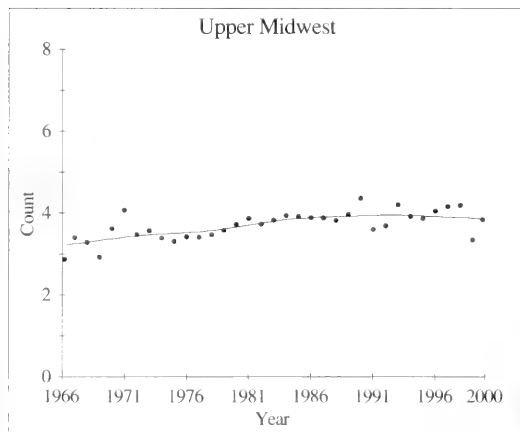


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Mourning Warbler**



Isidor Jeklin / Cornell Lab of Ornithology

**Code:** COYE

**Rangewide Distribution:** southern half of Canada, south through all of the U.S. to northern South America.

**ILLINOIS**

**Abundance:** very common migrant and summer resident; rare winter resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** overgrown fields, hedgerows, forest edges, and marshes.

**Nest:** a bulky cup of weed stems, grass, and bark lined with finer materials, in a shrub.

**Eggs:** 3–5, white to creamy, marked with browns or blacks, occasionally wreathed.

**Incubation:** 12 days.

**Fledging:** about 10 days.

The Common Yellowthroat breeds throughout much of North America, including the southern half of Canada and practically all of the U.S., and is one of the most widespread warblers on the continent. The “witchity, witchity, witchity” of the male is a familiar sound during the spring and summer months. The yellowthroat occupies a wide variety of habitats with thick vegetation, including marshes, brushy ditches, forest edges, hedgerows, brushy fields, and grasslands composed of red clover, alfalfa, mixed hay, or native grasses. It is generally single-brooded. Nests are concealed in dense

vegetation on or near the ground and are frequently parasitized by Brown-headed Cowbirds; Graber et al. (1983) found that approximately one-fourth of the nests were parasitized in Illinois.

**Illinois History**

In the late 1800s and early 1900s the Common Yellowthroat was “one of the most conspicuous members of the [warbler] family ... being both abundant and familiar” (Ridgway 1889) and a very common summer resident in Illinois (Cory 1909). Population size and distribution remained unchanged from 1909 to 1957 and most of the population occurred in the southern part of the state in the early to mid-1900s (Graber and Graber 1963). The Common Yellowthroat is the most conspicuous, widespread, and common warbler that breeds in Illinois (Graber and Graber 1963). This species probably breeds in every county (Graber et al. 1983).

**Breeding Bird Survey Trends**

The trend estimates for the Common Yellowthroat populations are  $-0.6\%$  per year (nonsignificant,  $P = 0.16$ ) for Illinois and  $-0.2\%$  per year (nonsignificant,  $P = 0.30$ ) for the upper Midwest for the period 1966–2000.

*Credibility Index:* IL = 1 and UM = 2.

**Distribution**

It was unusual to find a block where the Common Yellowthroat did not occur during the atlas project. It was found in priority blocks in all 102 counties and Confirmed in 89 of them. It was one of the most frequently reported species and the most frequently reported warbler in priority blocks during the atlas project (Table 4).

**Frequency**

The Common Yellowthroat was reported from 954 (95.6%) priority blocks and 165 nonpriority blocks. Breeding was Confirmed in 320 (32.1%) of the priority blocks, with the most frequently used breeding evidence criteria for these records being adults feeding young (166 FY records), fledged young (56 FL records), and occupied nest (56 ON records). Their dense brushy habitat is difficult to survey, and it is likely that Common Yellowthroats nested in most of the blocks in which they were recorded.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	320	32.1	33.5	394	30.6
Probable	466	46.7	48.8	538	41.8
Possible	168	16.8	17.6	187	14.5
Totals	954	95.6	100.0	1,119	87.0

\* 998 priority blocks

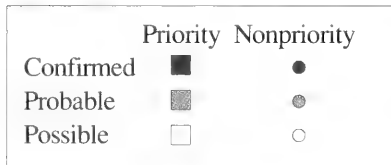
\*\* 1,286 total blocks (priority and nonpriority)



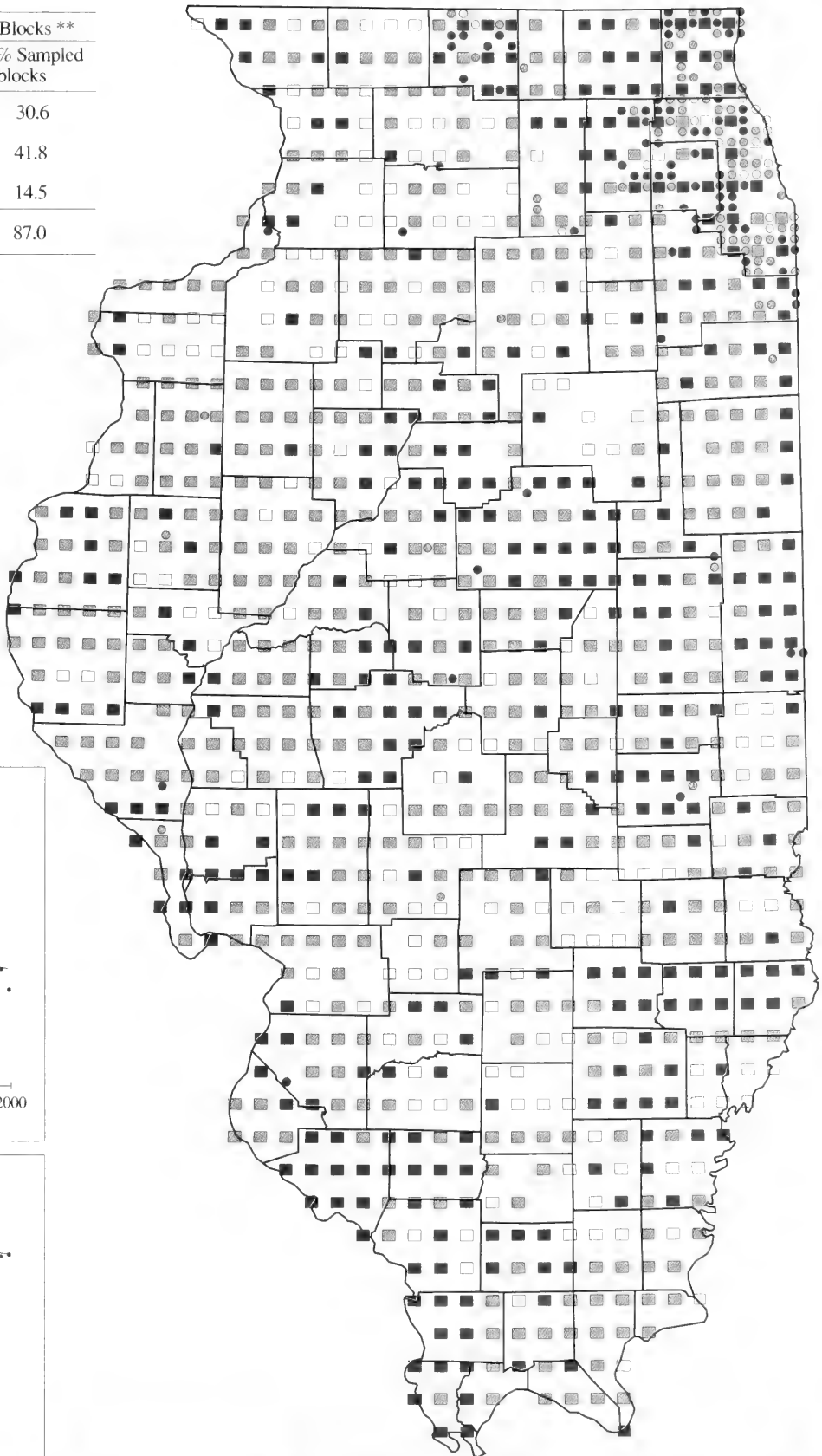
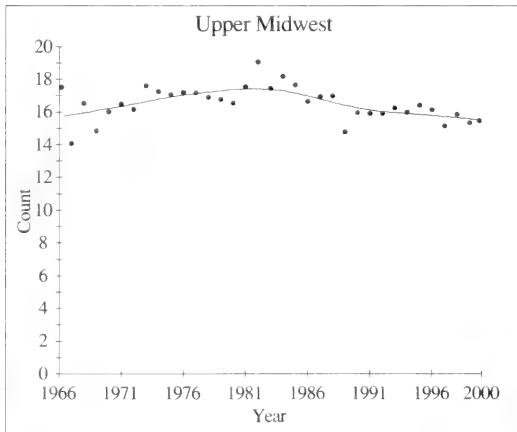
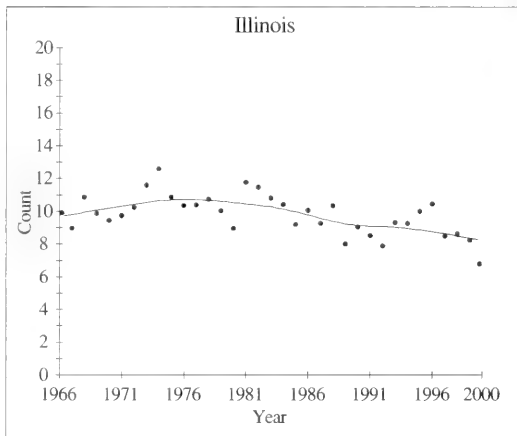
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Common Yellowthroat**



Dennis Oehmke

**Code:** HOWA

**Rangewide Distribution:** eastern U.S. south through eastern Central America to Costa Rica.

**ILLINOIS**

**Abundance:** uncommon to rare migrant and summer resident in south, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** undergrowth in mature deciduous forests, especially ravines and treefall gaps.

**Nest:** a compact cup of dead leaves, bark, and dried plant fibers lined with finer materials, in a shrub.

**Eggs:** 3–4, creamy white, variably marked with browns, occasionally wreathed.

**Incubation:** 12 days.

**Fledging:** from 8 to 9 days.

The Hooded Warbler, a shy and reclusive species of deep woods, is more often heard than seen. This forest interior species breeds in the eastern U.S. except in the northeast and Florida; it is rare throughout the Midwest. Its primary habitat is moist deciduous woods, such as bottomland and riparian areas with dense undergrowth. It has also been found nesting in mesic upland oak-hickory forests with a dense sapling-shrub understory in Illinois (Graber et al. 1983). Hooded Warblers are area sensitive and need large forested tracts. Hooded Warbler nests are placed fairly close to the ground in an understory shrub, often at the forest edge, and can be

easily found. This species is routinely parasitized by Brown-headed Cowbirds; three-fourths of the nests were parasitized in a study in Illinois (Ogden and Stutchbury 1994). Because of its need for large forests, this species is threatened by forest fragmentation, which reduces available habitat and increases cowbird parasitism (Ogden and Stutchbury 1994).

**Illinois History**

The Hooded Warbler in the late 1800s was a more or less common species in all rich damp woods (Ridgway 1889). In the early 1900s it was “an abundant summer resident in southern Illinois, but occurs casually in northern Illinois” (Cory 1909). The population changed from the early to late 1900s; Graber et al. (1983) stated it is “not a common bird in Illinois, and populations are spotty even in Southern Illinois.” Currently few Hooded Warblers are present in the state even in prime habitat.

**Breeding Bird Survey Trends**

The Hooded Warbler is a localized breeder in Illinois and the sample size is insufficient to estimate trends for the state. Data for the upper Midwest indicate a 3.2% per year (significant,  $P = 0.03$ ) increase in population during the 35-year sample period from 1966 to 2000.

*Credibility Index:* IL = none and UM = 2.

**Distribution**

During the atlas project, Hooded Warblers were uncommon and localized. They were found in priority blocks in 16 counties and confirmed as breeding in 4—Cook, Union, Hardin, and Vermilion. Hooded Warblers were found mostly in the south and northeast, which is similar to the distribution pattern described in the early 1900s (Cory 1909). They are also known to occur in several forested valleys in central and northern Illinois.

**Frequency**

The Hooded Warbler was reported from 19 (1.9%) priority blocks and 11 nonpriority blocks. Breeding was Confirmed in 4 blocks, all priority blocks, with single records for nest with eggs, adults feeding young, fledged young, and occupied nest (NE, FY, FL, and ON, respectively). Like many forest interior species, the Hooded Warbler is best detected by its song. It is likely that these warblers nested in many of the blocks in which they were recorded.

## Breeding Evidence

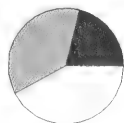
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	4	0.4	21.1	4	0.3
Probable	7	0.7	36.8	14	1.1
Possible	8	0.8	42.1	12	0.9
Totals	19	1.9	100.0	30	2.3

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

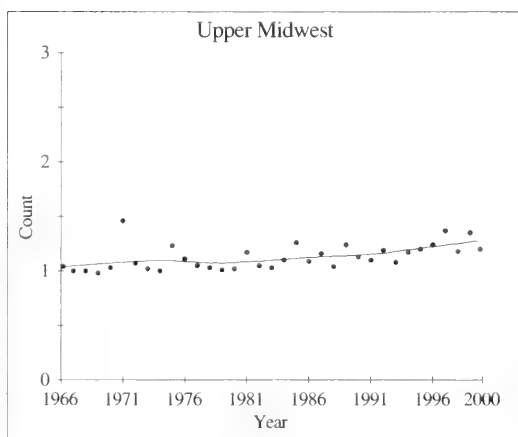


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Hooded Warbler**





Vern Kleen

**Code:** CAWA

**Rangewide Distribution:** south-central and southeastern Canada, through the central and eastern U.S., south to northwestern South America.

**ILLINOIS**

**Abundance:** fairly common migrant and very rare summer resident in north.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous woodlands and riparian thickets.

**Nest:** a bulky cup of dead leaves, grass, and dried plant fibers lined with finer materials, on or near the ground.

**Eggs:** 4, white to creamy, variably marked with browns, often wreathed.

**Incubation:** about 12 days.

**Fledging:** not currently known.

The shy and secretive Canada Warbler is identified by its “spectacles” and black “necklace.” This wood warbler breeds primarily in the northeastern U.S. and south-central and southeastern Canada. Canada Warblers prefer moist deciduous or mixed deciduous-coniferous forests with dense understory, especially bottomland forests near open water. They forage for insects and spiders on foliage, the ground, and by flycatching. Canada Warblers have a short breeding season due to a late arrival in the spring and early departure

in the fall. Their well-concealed nests are built on or near the ground, often under overhanging vegetation. Canada Warblers are not abundant in most of their breeding range and populations in recent decades have declined, according to Breeding Bird Survey data (Conway 1999). This species benefits from an increase in the density of forest understory vegetation created by forest regeneration, succession, and fire-induced changes (Conway 1999).

**Illinois History**

During the 1800s and early 1900s, the Canada Warbler was not known to nest in Illinois. The closest known breeding area at that time was northern Wisconsin (Ridgway 1889; Cory 1909). The state’s first confirmed breeding was a nest with young near Joliet in Will County in June of 1980 (Milosevich and Olson 1981). The Canada Warbler is a sporadic and very rare breeder in Illinois. A few pairs were known to regularly breed at Lowden-Miller State Forest in Ogle County in the mid-1990s (S. Bailey, pers. comm.).

**Breeding Bird Survey Trends**

The Canada Warbler, a localized breeder at the southern end of its range in Illinois, is not adequately sampled by the BBS. The long-term trend estimate for the upper Midwest is a  $-0.3\%$  per year (nonsignificant,  $P = 0.81$ ).

*Credibility Index:* IL = none and UM = 2.

**Distribution**

Like the Mourning Warbler, the primary breeding range of the Canada Warbler is considerably north of Illinois and those individuals that nest or attempt to nest here are well south of the normal limits of their range. The few records obtained during the atlas project were limited to the extreme northeastern corner of the state. Canada Warblers were found in three counties—Lake, Cook, and Will.

**Frequency**

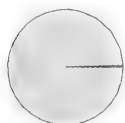
The Canada Warbler was reported from 4 (0.4%) priority blocks and 2 nonpriority blocks; all records were from the northeastern counties. Breeding was not Confirmed in any priority or nonpriority block. Since Canada Warblers are known to be late-spring migrants, it is possible that records from the first half of June may have been migrants.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	0	0.0	0.0	0	0.0
Probable	1	0.1	25.0	2	0.2
Possible	3	0.3	75.0	4	0.3
Totals	4	0.4	100.0	6	0.5

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

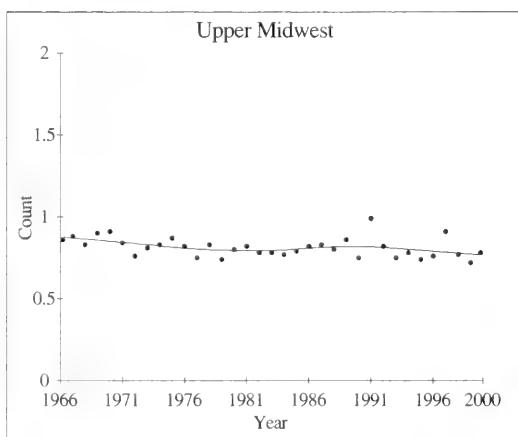


% of priority blocks with records for this species

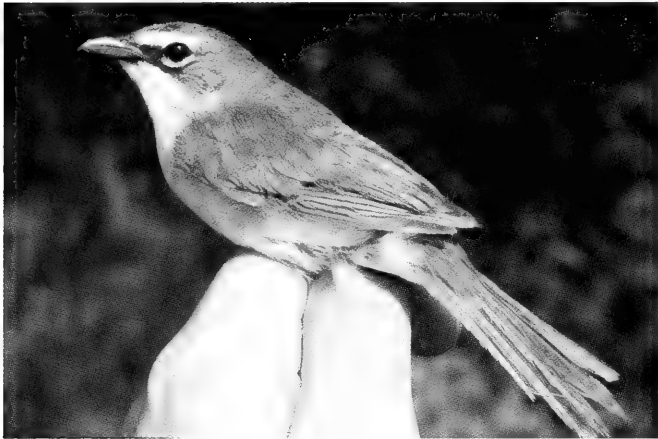
	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Canada Warbler**



Vern Kleen

**Code: YBCH**

**Rangewide Distribution:** southwestern Canada and most of the U.S., south through Central America to Panama.

**ILLINOIS**

**Abundance:** common migrant and summer resident in south, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** dense brush or scrub, especially along streams.

**Nest:** large, concealed cup of dead leaves, straw, weeds, and vine bark lined with fine weed stems and grass, in a shrub.

**Eggs:** 3–4, white to creamy, with sharply defined brown marks near the large end.

**Incubation:** 11 days.

**Fledging:** about 8 days.

The Yellow-breasted Chat is an unusual warbler in that it looks, acts, and sings more like a mockingbird than a warbler. It has been suggested that it may be a member of the tanager family (Sibley and Ahlquist 1982) or the blackbird family and closely related to the Bobolink (Lovette and Bermingham 2002). Yellow-breasted Chats breed throughout much of the U.S., but these secretive and elusive birds are seldom seen (Eckerle and Thompson 2001). They inhabit and nest in low dense vegetation with open tree canopy, such as thickets, briar patches, early second-growth forest, and forest edges, that is, the types of habitats that develop shortly after

timber harvest, fire, or abandonment of fields and pastures. Nests are well hidden on or near the ground and protected in the dense vegetation, but are frequently parasitized by Brown-headed Cowbirds. In the eastern U.S. the population probably benefited from deforestation and fragmentation that occurred in the 1800s and early 1900s. As the open brushy habitat became reforested, populations declined in some areas. Creation and maintenance of early successional habitat by fire, timber harvest, and agricultural set-asides would benefit this species (Eckerle and Thompson 2001).

**Illinois History**

In the late 1800s and early 1900s the Yellow-breasted Chat was an abundant bird in suitable locations in most parts of Illinois (Ridgway 1889; Cory 1909). Declines in chat numbers were noted beginning in the early 1900s (Graber et al. 1983). Population densities in shrub habitat in southern Illinois dropped from 25.0 birds per 100 acres in 1907–1909 to 6.7 in 1979–1980 (Graber et al. 1983).

**Breeding Bird Survey Trends**

The population of Yellow-breasted Chats in Illinois declined significantly at a rate of  $-3.4\%$  per year ( $P < 0.01$ ) from 1966 to 2000. In the upper Midwest the trend is estimated at  $-1.8\%$  per year (significant,  $P < 0.01$ ) for the same period. *Credibility Index:*  $IL = 1$  and  $UM = 2$ .

**Distribution**

Yellow-breasted Chats occurred throughout the state during the atlas project, with priority block records in 89 counties. They were most frequently reported from priority blocks in the southern half of the state. The species is known to occur at several locations that were not surveyed by the atlas project.

**Frequency**

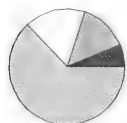
The Yellow-breasted Chat was reported from 369 (37.0%) priority blocks and 47 nonpriority blocks. Breeding was Confirmed in 63 (6.3%) of the priority blocks, most commonly by observation of adults feeding young (24 FY records) and occupied nest (13 ON records). It was Confirmed in 17% of the 369 priority blocks in which it was reported, which is a relatively low rate of confirmation. With its relatively conspicuous behavior of singing loudly from exposed perches, the chat was probably found during the atlas project if it was present. Because chats are territorial, it is likely that they nested in most blocks in which they were recorded.

## Breeding Evidence

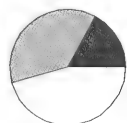
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	63	6.3	17.1	81	6.3
Probable	138	13.8	37.4	156	12.1
Possible	168	16.8	45.5	179	13.9
Totals	369	37.0	100.0	416	32.3

\* 998 priority blocks

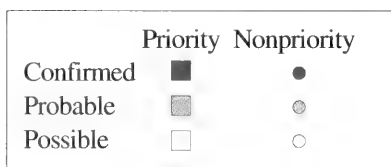
\*\* 1,286 total blocks (priority and nonpriority)



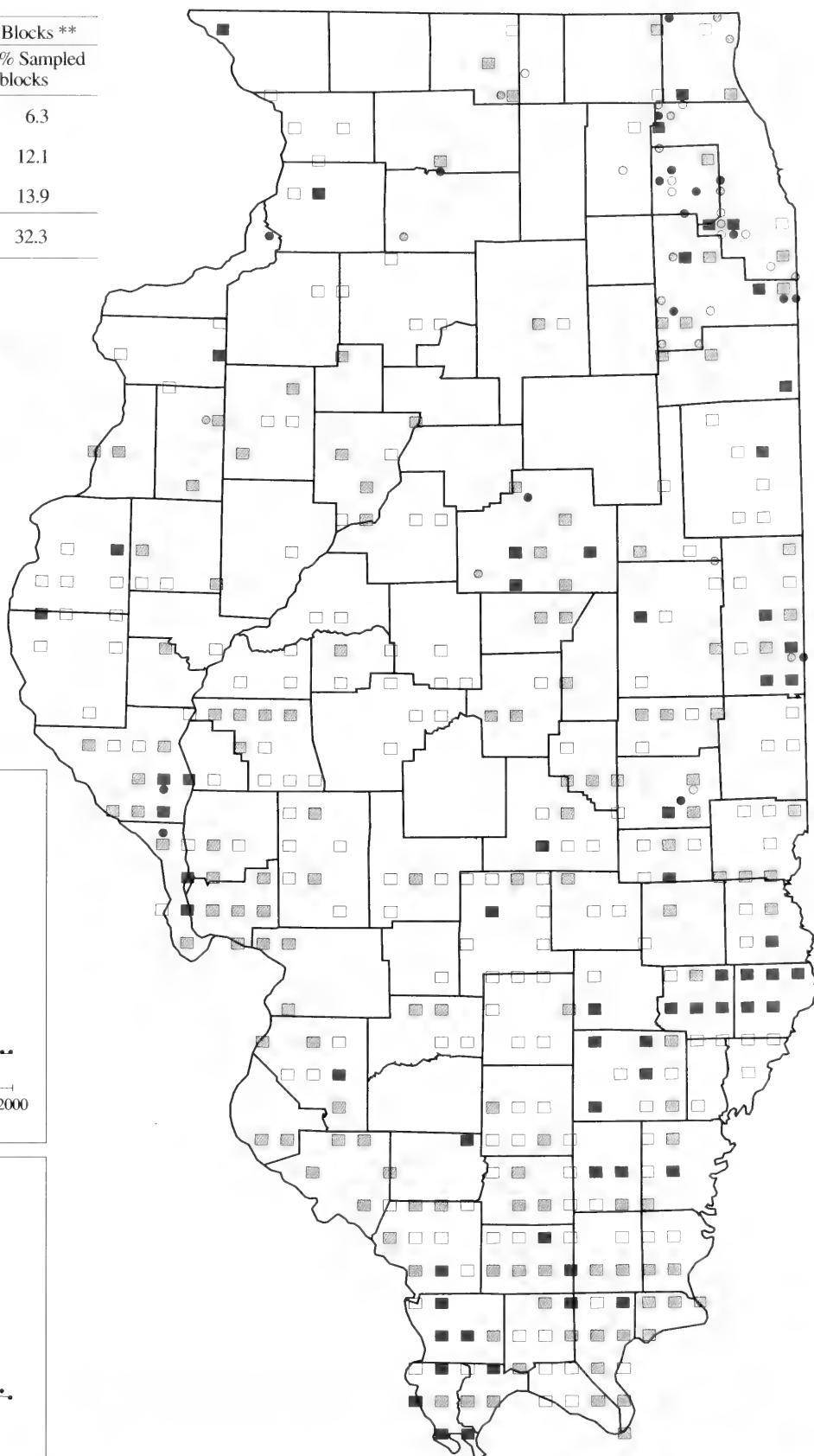
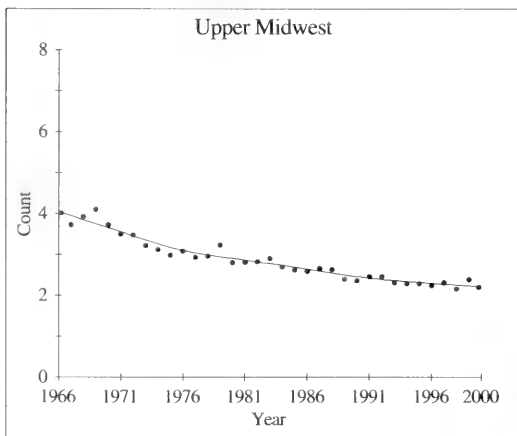
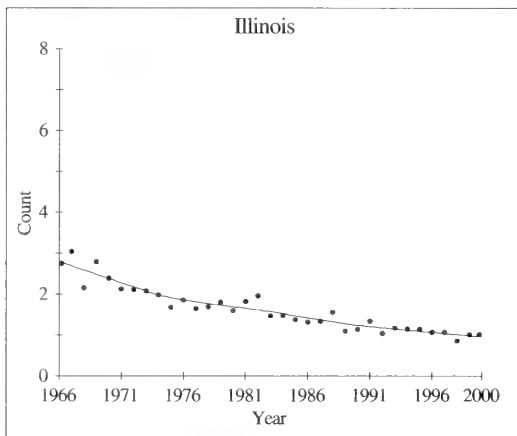
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Yellow-breasted Chat**



Joe Milosevich

**Code:** SUTA

**Rangewide Distribution:** southeastern and far southwestern U.S., south into northwestern South America.

**ILLINOIS**

**Abundance:** common migrant and summer resident in south, decreasing northward.

**Endangered/Threatened Status:** none

**Breeding Habitat:** deciduous and mixed forests, open and riparian woodlands, parks.

**Nest:** a loosely built cup of grass, forbs, and Spanish moss lined with fine grass, on horizontal branch of a tree.

**Eggs:** 4, pale blue or pale green, marked with browns, occasionally wreathed.

**Incubation:** 11–12 days.

**Fledging:** about 10 days.

The Summer Tanager breeds in the eastern U.S. from Nebraska to Pennsylvania and south to the Gulf of Mexico, and in parts of the southwestern U.S. and northern Mexico. In the East, the Summer Tanager is a bird of open forests and forest edges and is commonly found in upland deciduous or mixed deciduous-coniferous forests with openings (Robinson 1996). This secretive species is most often detected by the sound of its distinctive “kitty-tuck-tuck-tuck” call. Summer Tanagers are less dependent on the forest interior and are found in a greater variety of forested habitats than Scarlet

Tanagers. In the East, nests are usually built in a cluster of leaves near the outer portion of a long branch in a large tree, usually over an opening or near the forest edge. Summer Tanagers are insectivores, and noted for being bee and wasp specialists (Robinson 1996). The male Summer Tanager is the only all-red bird that occurs in Illinois.

**Illinois History**

In the late 1800s and early 1900s the Summer Tanager was considered an abundant species in dry upland woods in the southern half of Illinois and a rare summer visitant in the north (Ridgway 1889; Cory 1909). In southern Illinois the Summer Tanager was recorded in the 1907–1909 and 1957–1958 censuses but did not occur in great enough numbers to allow a comparison of the data (Graber and Graber 1963).

**Breeding Bird Survey Trends**

For 1966–2000 the trend estimates for the Summer Tanager are 3.3% per year (nonsignificant,  $P = 0.18$ ) for Illinois and 0.4% per year (nonsignificant,  $P = 0.71$ ) for the upper Midwest.

*Credibility Index:* IL = 2 and UM = 1.

**Distribution**

Illinois is at the northern edge of the Summer Tanager’s breeding range. During the atlas project, it was found in priority blocks in 47 counties. The atlas distribution was similar to that described 100 years ago. Confirmed breeding was reported in 15 counties, mostly in the south. Small populations of Summer Tanagers are known to occur at scattered sites in northern Illinois that were not sampled during the atlas project.

**Frequency**

The Summer Tanager was reported from 129 (12.9%) priority blocks and 14 nonpriority blocks. Breeding was Confirmed in 20 (2.0%) of the priority blocks, and adults feeding young (7 FY records) was the most frequently used breeding evidence for these records. It was Confirmed in 15% of the 129 priority blocks in which it was recorded, which is a relatively low rate of confirmation among species reported in more than 10 priority blocks. It is likely that nesting occurred in most blocks where these tanagers were reported.

## Breeding Evidence

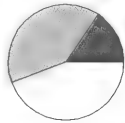
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	20	2.0	15.5	25	1.9
Probable	52	5.2	40.3	57	4.4
Possible	57	5.7	44.2	61	4.7
Totals	129	12.9	100.0	143	11.1

\* 998 priority blocks

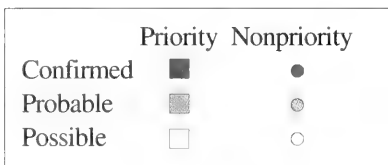
\*\* 1,286 total blocks (priority and nonpriority)



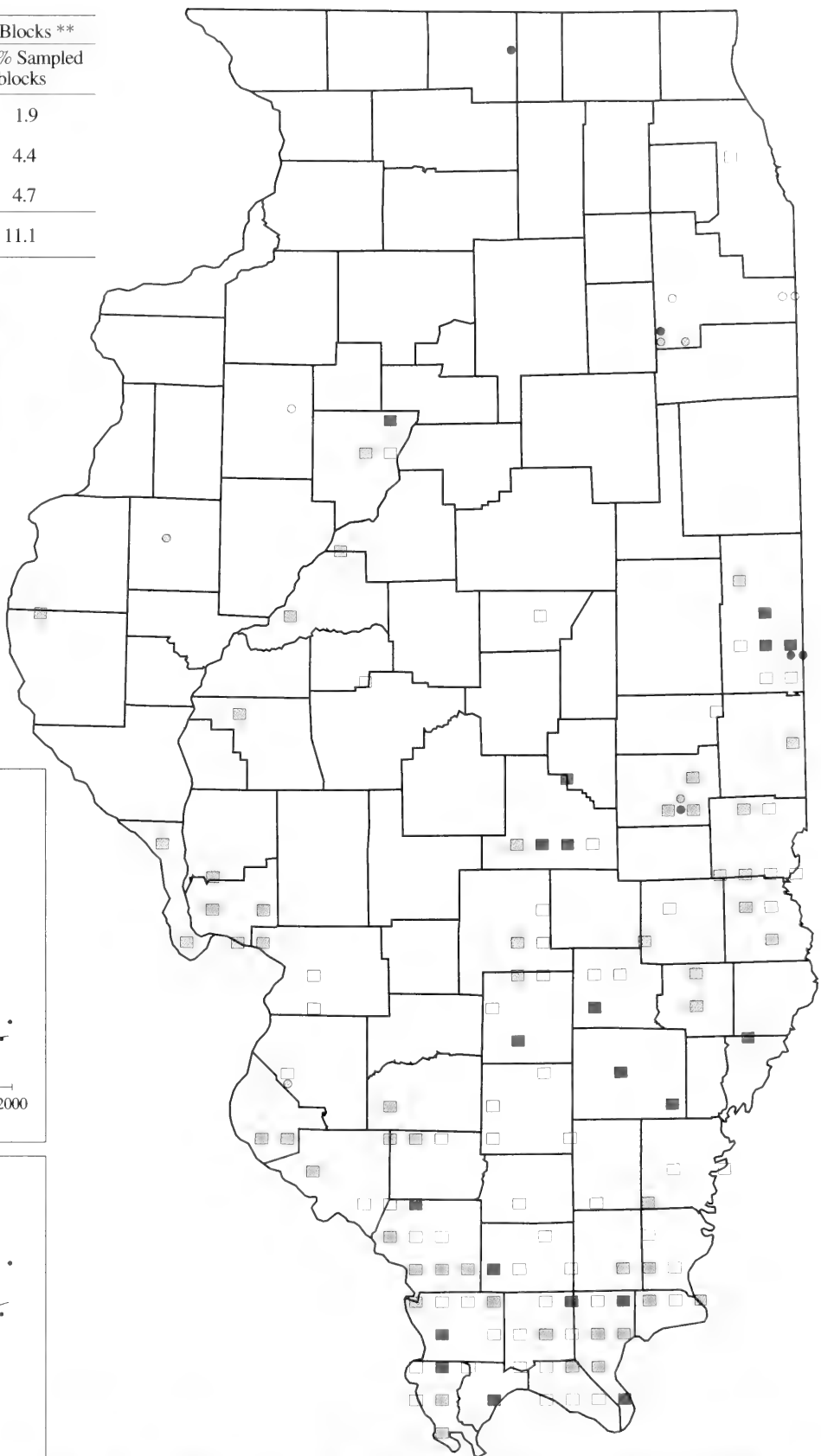
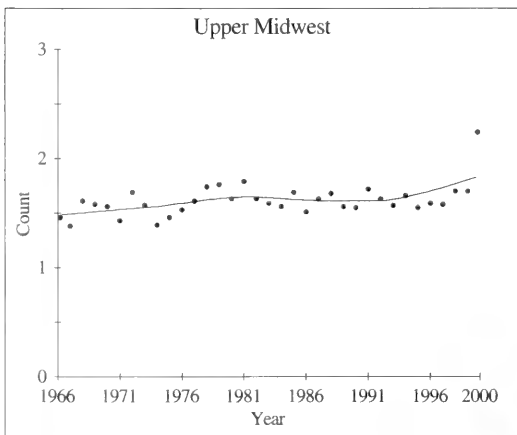
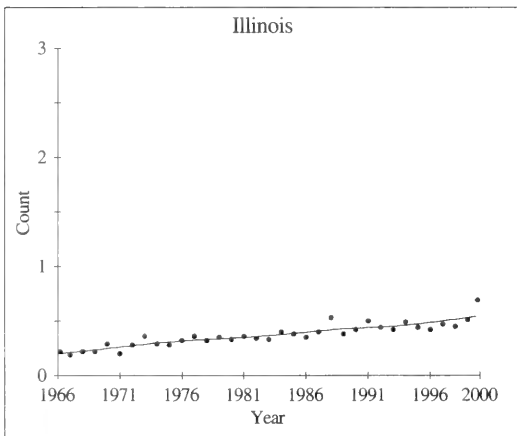
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Summer Tanager**





Peter Dring

**Code:** SCTA

**Rangewide Distribution:** extreme southeastern Canada, south through the eastern U.S. to northwestern South America.

**ILLINOIS**

**Abundance:** fairly common migrant and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** deciduous and mixed forests and woodlands.

**Nest:** loosely built saucer of grass, rootlets, forbs, and twigs lined with finer materials, in a tree.

**Eggs:** 4, greenish to bluish, marked with browns, often wreathed.

**Incubation:** 13–14 days.

**Fledging:** from 9 to 11 days.

Despite the male's colorful red and black plumage, the Scarlet Tanager is a difficult bird to spot. Because it spends much of its time in the upper canopy, this species is more often heard than seen. Scarlet Tanagers breed in the eastern U.S. north of the Gulf states to southeastern Canada. They are found most frequently in large mature upland and bottomland forests. In small forest blocks this species has high rates of predation and brood parasitism, which lower reproductive success (Mowbray 1999). Scarlet Tanagers are

monogamous and aggressively defend territories, the size of which varies depending on the amount of forest area, location, and vegetation type (Robinson 1992; Mowbray 1999). Nests are usually placed at the distal portion of a large branch of a large tree in the mid-story level of the canopy and often in a clump of leaves that provides some screening from above (Prescott 1965). Throughout their range, nests are parasitized by Brown-headed Cowbirds. In woodlots studied in Illinois parasitism rates ranged from 75 to 100% (Brawn and Robinson 1996). In the past three decades the population overall seems to be stable (Mowbray 1999).

**Illinois History**

A century ago, the Scarlet Tanager was a common summer resident of Illinois (Cory 1909). Ridgway (1889) noted "In the southern half of Illinois . . . while not an uncommon summer resident . . . [it] is decidedly a less abundant bird than the Summer [Tanager] Redbird."

**Breeding Bird Survey Trends**

During the sample period 1966 to 2000, the trend estimate for the Scarlet Tanager population in Illinois is  $-2.5\%$  per year (nonsignificant,  $P = 0.40$ ). In the upper Midwest the trend estimate indicates an increase in population at a rate of  $1.2\%$  per year (significant,  $P < 0.01$ ) from 1966 to 2000.

*Credibility Index:*  $IL = 2$  and  $UM = 2$ .

**Distribution**

The Scarlet Tanager was distributed throughout Illinois during the atlas project and was reported in priority blocks in 93 counties and Confirmed as breeding in 31 of them. It may have bred in most of the counties in which it was reported. This species was most often found in the larger, contiguous forests.

**Frequency**

The Scarlet Tanager was reported from 275 (27.6%) priority blocks and 77 nonpriority blocks. Breeding was Confirmed in 40 (4.0%) of the priority blocks, with the most frequently reported breeding evidence criteria being adults feeding young (17 FY records) and fledged young (12 FL records). Nests were difficult to find in the dense foliage. The Scarlet Tanager was Confirmed in 14% of the 275 priority blocks in which it was recorded, which is among the lowest rates of confirmation for species reported in more the 10 priority blocks. It is likely that nesting occurred in most blocks where these birds were reported.

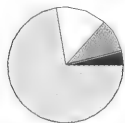


## Breeding Evidence

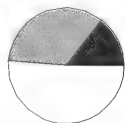
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	40	4.0	14.5	58	4.5
Probable	94	9.4	34.2	132	10.3
Possible	141	14.1	51.3	162	12.6
Totals	275	27.6	100.0	352	27.4

\* 998 priority blocks

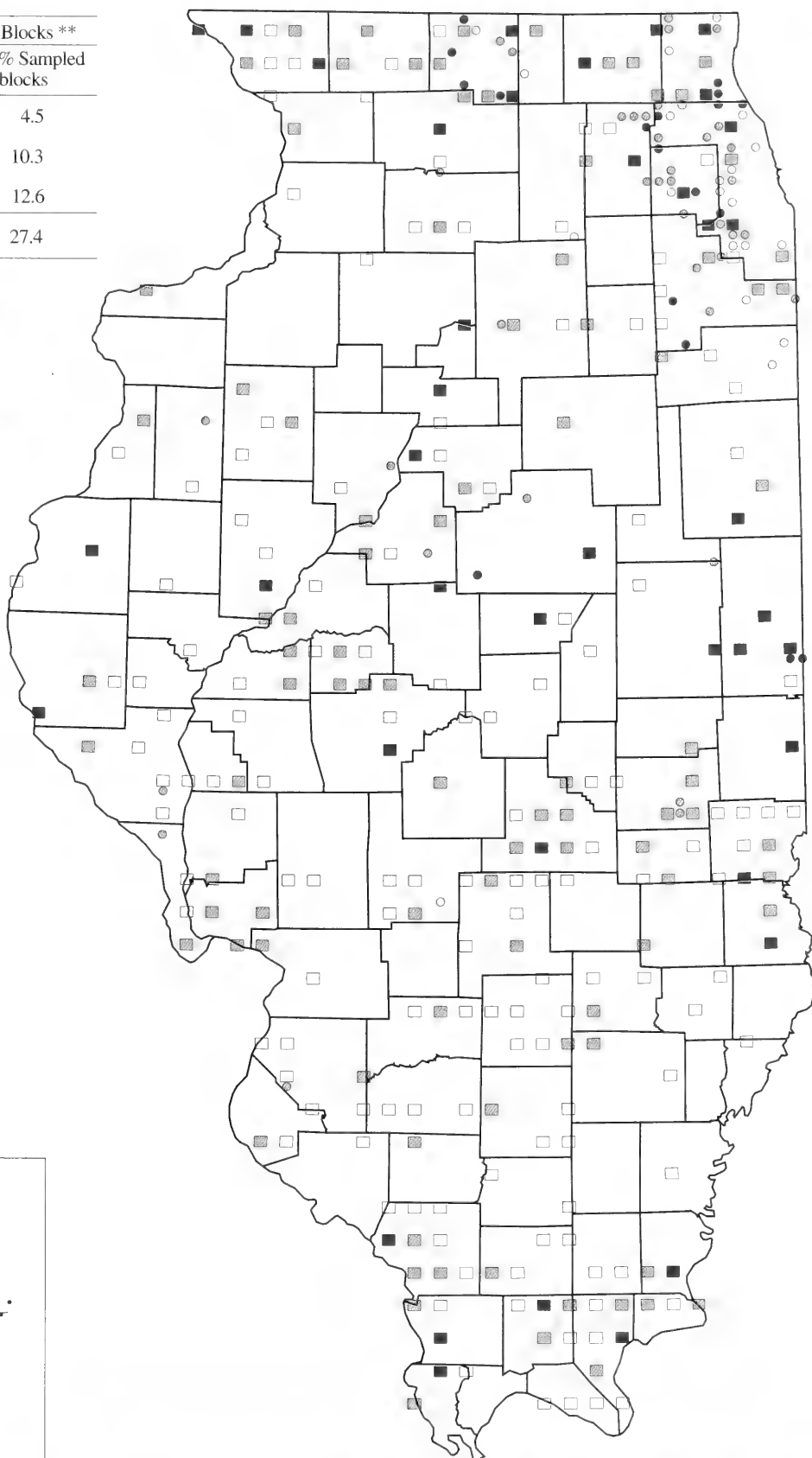
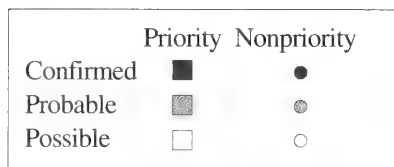
\*\* 1,286 total blocks (priority and nonpriority)



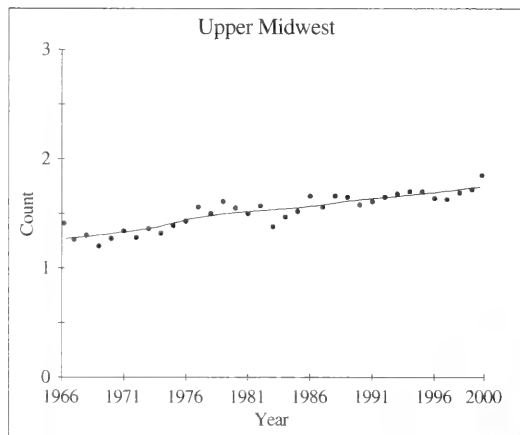
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Scarlet Tanager**



Robert Randall

**Code:** EATO

**Rangewide Distribution:** extreme southeastern Canada, south through the eastern U.S. to southern Texas

**ILLINOIS**

**Abundance:** fairly common migrant and summer resident, uncommon winter resident in south, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** forest and woodland edges, thickets.

**Nest:** a cup of leaves, grass, bark, twigs, and rootlets lined with fine grass and hair, on or near the ground.

**Eggs:** 3–4, grayish to creamy white, spotted with browns, often wreathed.

**Incubation:** 12–13 days.

**Fledging:** from 10 to 12 days.

Until recently the Eastern Towhee was known as the Rufous-sided or Red-eyed Towhee; earlier names included chewink and ground robin. Its breeding range is primarily in the eastern half of the U.S. Towhees spend most of their time on or near the ground in dense cover searching for seeds, fruits, and invertebrates. The male sings his “drink-your-teeeee” song from the taller trees in its territory. Eastern Towhees prefer forest edges, overgrown fields, and other dense shrubby areas with a well-developed litter layer. Their nests, which are placed on the ground at the base of a shrub, small

tree, or clump of grass, are commonly parasitized by Brown-headed Cowbirds (Greenlaw 1996). The shrubby successional habitats that followed the clearing of forests and abandonment of agricultural fields and pastures increased the amount of habitat available for towhees and other scrub-dwelling species, but more recently habitat loss has resulted in a decline in the population nationally (Irland 1982; Jackson et al. 1996; Askins 2000).

**Illinois History**

The Eastern Towhee was considered a common summer resident (Cory 1909) and a permanent resident in the southern portion of the state a century ago (Ridgway 1889). Information on population size and change during the first half of the 1900s is lacking.

**Breeding Bird Survey Trends**

The BBS trend estimate for the Illinois population of Eastern Towhees is  $-1.2\%$  per year (nonsignificant,  $P = 0.33$ ) from 1966 to 2000. In the upper Midwest the rate of decline over the same period is  $-1.3\%$  per year (significant,  $P < 0.01$ ). *Credibility Index:* IL = 2 and UM = 2.

**Distribution**

The Eastern Towhee was found in priority blocks in 101 counties during the atlas project. It was most frequently reported from priority blocks in the southern part of the state. The Eastern Towhee probably occurs in every Illinois township.

**Frequency**

The Eastern Towhee was reported from 639 (64.0%) priority blocks and 97 nonpriority blocks. Breeding was Confirmed in 119 (11.9%) of the priority blocks. The most frequently used breeding evidence criteria for Confirmed records in priority blocks were adults feeding young and fledged young (57 FY and 41 FL records, respectively). Nests were difficult to find in the dense, brushy habitat they prefer and other evidence of Confirmed breeding was also difficult to obtain. This species was Confirmed in 19% of the 639 priority blocks in which it was reported, which is a relatively low rate of confirmation considering the large number of records. It is likely that nesting occurred in most blocks where Eastern Towhees were reported.

## Breeding Evidence

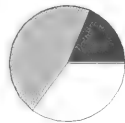
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	119	11.9	18.6	149	11.6
Probable	296	29.7	46.3	337	26.2
Possible	224	22.4	35.1	250	19.4
Totals	639	64.0	100.0	736	57.2

\* 998 priority blocks

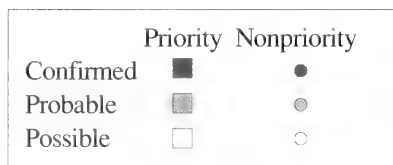
\*\* 1,286 total blocks (priority and nonpriority)



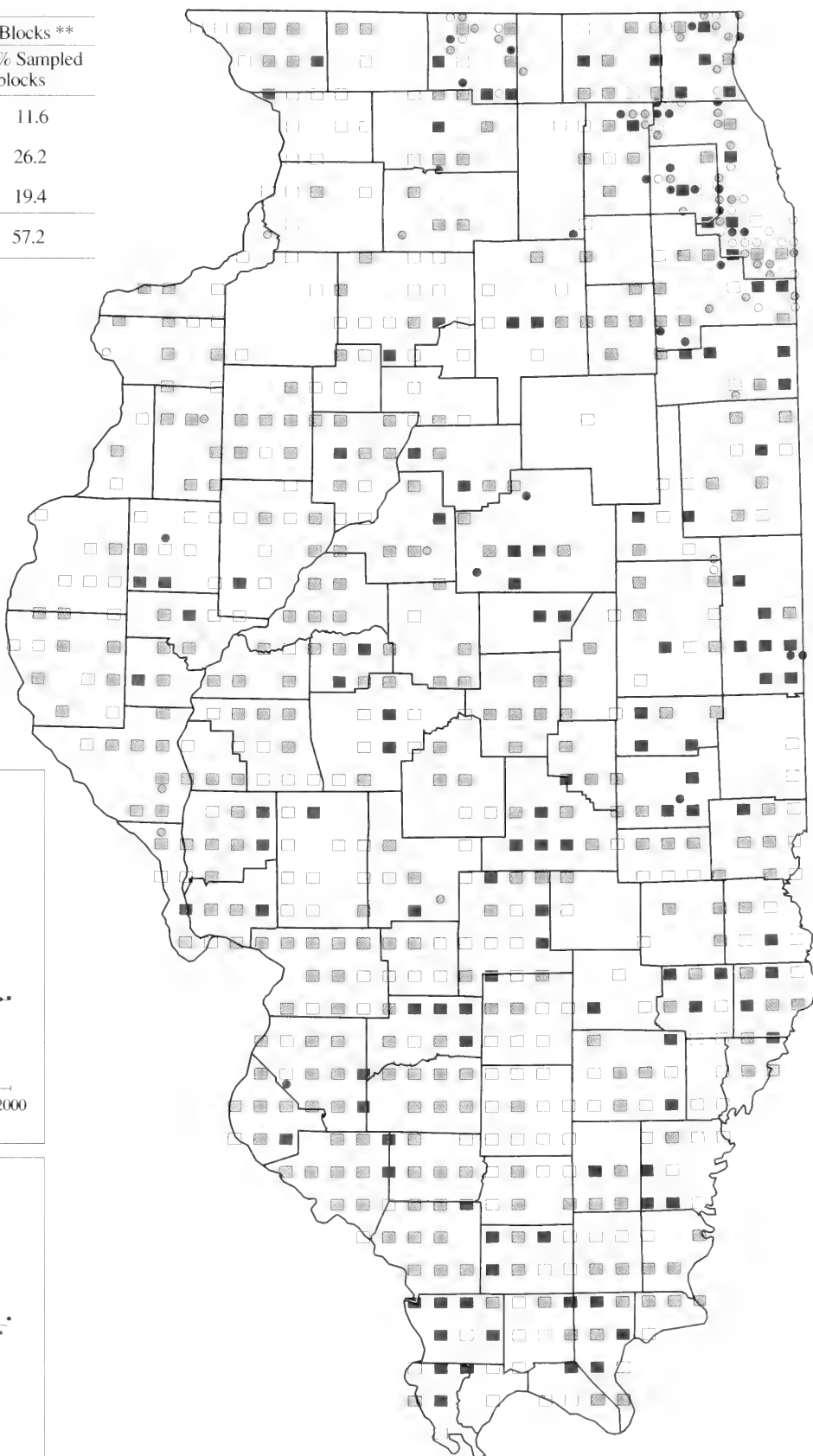
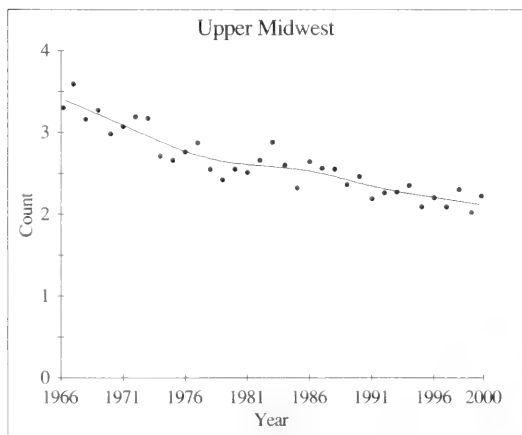
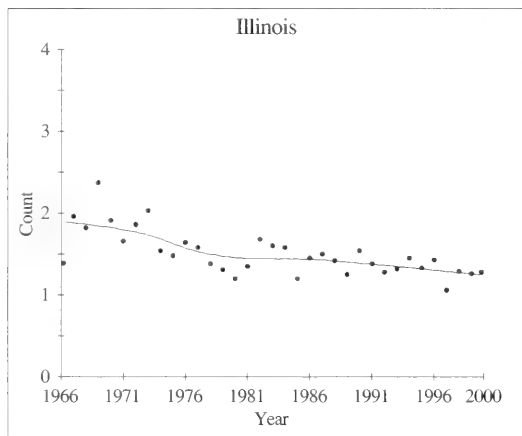
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Eastern Towhee**



Dennis Oehmke

**Code: CHSP**

**Rangewide Distribution:** eastern Alaska and northern Canada south through most of the U.S. into Central America.

**ILLINOIS**

**Abundance:** common migrant and summer resident; very rare winter resident in south.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** edges, open and residential areas with small evergreen trees.

**Nest:** a compact cup of grass, forb stalks, and rootlets lined with hair or fur, in a small tree or vine.

**Eggs:** 4, bluish green, marked with browns or blacks, often wreathed.

**Incubation:** 11–14 days.

**Fledging:** from 8 to 12 days.

Chipping Sparrows are one of North America's most widely distributed and abundant migratory songbirds. They breed throughout much of North America from Alaska to Central America, including most of the U.S. These sparrows inhabit open forests, forest edges, river and lake shores, and brushy fields. They are found around rural residences and are common in suburban areas where they find shrubby habitats with adjacent open grassy areas and ornamental conifers (Middleton 1998). They feed on or near the ground in open areas. This sparrow is named for its song, a series of dry, single pitched chips in the form of a trill; in locations where it occurs with the Pine Warbler, both species respond to each other's song. Although generally considered to be monogamous, recent studies in Ontario found that males may move through adjacent territories mating with several females (Middleton and Prescott 1989), suggesting that polygamous

behavior may be more common than previously thought. Chipping Sparrows nest in small trees and shrubs with a preference for conifers. Most nests are placed 3 to 9 feet above the ground. The population and range expanded as forests were cleared in the 1800s but then declined in abundance due to reforestation and competition from the introduced House Sparrow. Deforestation and habitat fragmentation have increased their exposure to Brown-headed Cowbird parasitism (DeSante and George 1994). Because they have adapted to man-made habitats, Chipping Sparrows may be more abundant today than prior to Euro-American settlement (Middleton 1998).

**Illinois History**

In the late 1800s and early 1900s the Chipping Sparrow was a common summer resident (Cory 1909). Ridgway (1889) stated that it was so well known that "a particular account of its habits is hardly necessary." Graber and Graber (1963) estimated that the number of birds during 1957–1958 was about 80% lower than in 1909 but noted the population in a given area is highly variable from year to year. A shift in population from southern to northern Illinois also occurred during the first half of the 1900s (Graber and Graber 1963).

**Breeding Bird Survey Trends**

Chipping Sparrow populations in the state and region have experienced increases over the 35-year period from 1966 to 2000. The rates of increase are 8.0% per year (significant,  $P < 0.01$ ) for Illinois and 2.0% per year (significant,  $P < 0.01$ ) for the upper Midwest.

*Credibility Index: IL = 1 and UM = 1.*

**Distribution**

The Chipping Sparrow was found in all 102 counties during the atlas project. It was reported in nearly every priority block in the northern two-thirds of the state and less frequently in the southern third. The Chipping Sparrow undoubtedly nests in every Illinois township. During the atlas project, it was among the most frequently reported species in priority blocks.

**Frequency**

The Chipping Sparrow was reported from 867 (86.9%) priority blocks and 144 nonpriority blocks. Breeding was Confirmed in 531 (53.2%) of the priority blocks. Evidence of breeding was relatively easy to obtain for the Chipping Sparrow because of its affinity for easily accessible habitats. The most frequently used breeding evidence criteria for Confirmed records in priority blocks were adults feeding young (224 FY records) and fledged young (143 FL records). Chipping Sparrows likely nested in the majority of the other blocks in which they were reported but not Confirmed.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	531	53.2	61.2	621	48.3
Probable	184	18.4	21.2	211	16.4
Possible	152	15.2	17.5	179	13.9
Totals	867	86.9	100.0	1,011	78.6

\* 998 priority blocks

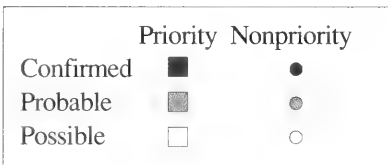
\*\* 1,286 total blocks (priority and nonpriority)



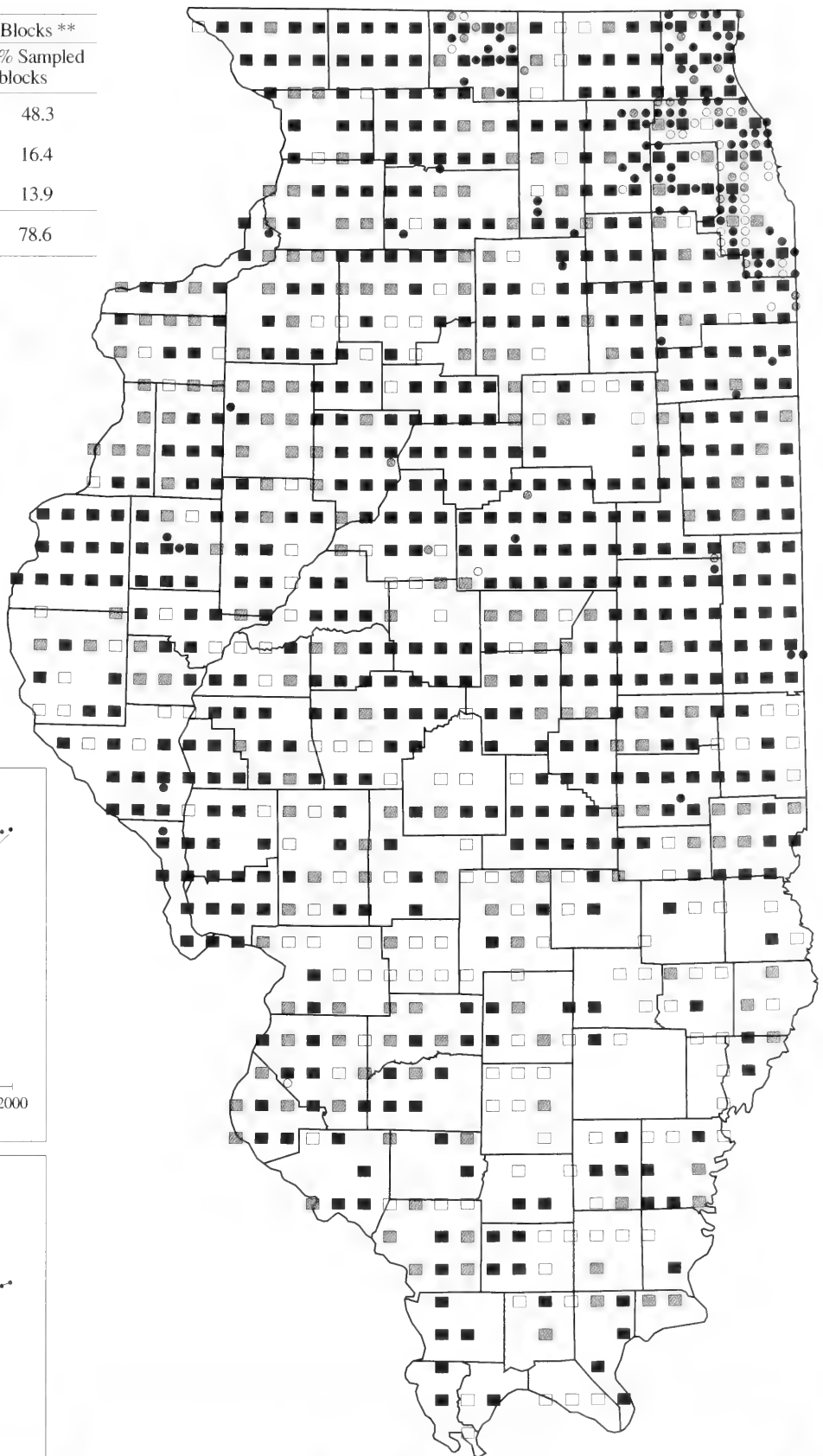
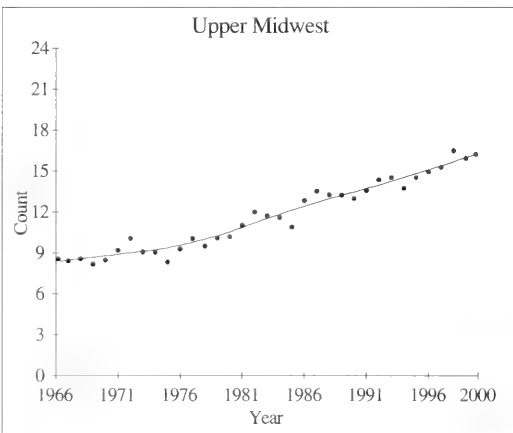
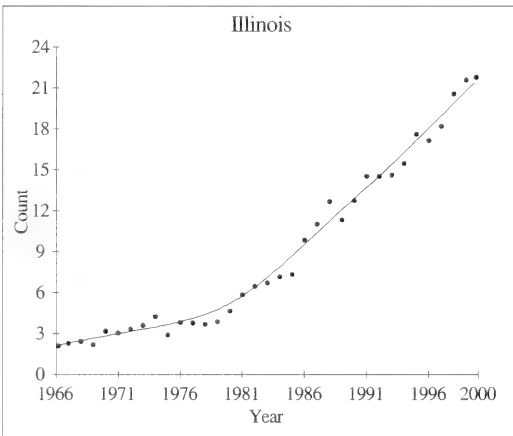
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Chipping Sparrow**



Joe Milosevich

**Code:** CCSP

**Range-wide Distribution:** north-central Canada, south through the central U.S. to southern Mexico.

**ILLINOIS**

**Abundance:** rare migrant and very rare summer resident (in north).

**Endangered/Threatened Status:** none

**Breeding Habitat:** fields with scattered shrubs and Christmas tree plantations.

**Nest:** a compact cup of grass, forb stalks, twigs, and rootlets lined with finer materials, on or near the ground.

**Eggs:** 3–4, bluish green, marked with browns or blacks, often wreathed.

**Incubation:** 10–12 days.

**Fledging:** from 8 to 9 days.

The Clay-colored Sparrow breeds primarily in the northern Great Plains and Canadian prairie region. Throughout the first half of the 1900s its range expanded eastward through the northern states to New York as early successional habitat was created by logging and abandonment of farms (Knapton 1994). This drab, inconspicuous sparrow is easily overlooked and often misidentified. Its buzzy, insect-like song may be the best clue to its identity and presence. Clay-colored Sparrows occur in brushy and weedy areas, open shrubland, second-growth areas, and fencerows. Nests are hidden at the

base of grasses or in low shrubs. In the last three decades the North American population may be declining due to the loss of early successional habitats to natural maturation, conversion to agriculture, and urbanization (Knapton 1994).

**Illinois History**

The Clay-colored Sparrow was not that well known in Illinois in the 1800s. Ridgway (1889) stated that it was “known with certainty to occur only in the more northern portions of the State, although it no doubt inhabits the prairie districts well southward, especially in the more western counties.” Cory (1909) wrote that it “may be considered a summer resident in northern Illinois.” Following these accounts, the species was scarcely reported until the 1970s; the first nest was found in evergreens at a Christmas tree farm in northern Winnebago County in 1983 (Pucelik and Pucelik 1984). The species was initially listed as an endangered species in Illinois in 1989. However, since Illinois is at the southern edge of its breeding range and the species was not in jeopardy in its primary range, the Clay-colored Sparrow was delisted in 1994.

**Breeding Bird Survey Trends**

In Illinois the Clay-colored Sparrow population is so small and localized that population trend estimates cannot be determined. For the upper Midwest the long-term trend is estimated at  $-0.3\%$  per year (nonsignificant ( $P = 0.58$ )).

**Credibility Index:**  $IL = \text{none}$  and  $UM = 1$ .

**Distribution**

The sole atlas record for the Clay-colored Sparrow was in Winnebago County in northern Illinois. This was very close to the site where nesting was Confirmed for the first time three years prior to the initiation of the atlas project. Some references indicate it may also occur as a breeding species in western Illinois but that has not been documented.

**Frequency**

The Clay-colored Sparrow was reported from 1 (0.1%) priority block, where it was a Probable breeder, and none of the nonpriority blocks. The Clay-colored Sparrow may be a regular breeder in appropriate habitat in northern Illinois but it is seldom located.

## Breeding Evidence

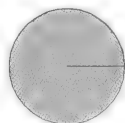
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	0	0.0	0.0	0	0.0
Probable	1	0.1	100.0	1	0.1
Possible	0	0.0	0.0	0	0.0
Totals	1	0.1	100.0	1	0.1

\* 998 priority blocks

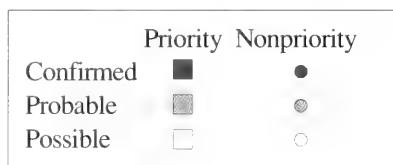
\*\* 1,286 total blocks (priority and nonpriority)



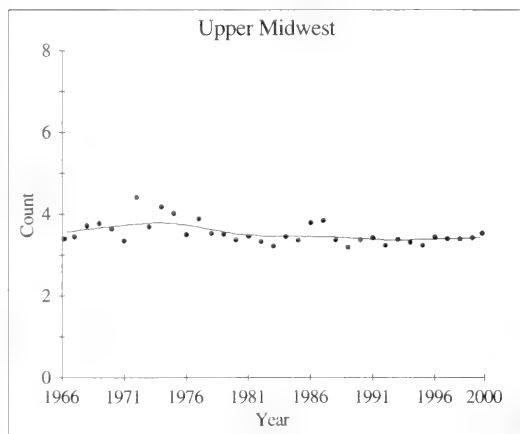
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Clay-colored Sparrow**





Peter Dring

**Code:** FISP

**Rangewide Distribution:** extreme southeastern Canada, south through the eastern half of the U.S. to northeastern Mexico.

**ILLINOIS**

**Abundance:** common migrant and summer resident, fairly common winter resident in south, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open fields, forest edges, brushy areas, and old field habitat.

**Nest:** a somewhat flimsy cup of grasses and forbs lined with finer materials, on the ground or low to the ground in a shrub.

**Eggs:** 3–5, creamy or pale greenish to bluish white, marked with browns, occasionally wreathed.

**Incubation:** 12 days.

**Fledging:** from 7 to 8 days.

The Field Sparrow is a common bird in the eastern U.S. This easily recognized sparrow with a distinctive pinkish bill is found in brushy fields, early successional habitats, hedgerows, and woodland edges and openings. Field Sparrows thrive in disturbed habitats but avoid close association with human habitations. Early season nests are built on or near the ground in a clump of grass or at the base of a small tree or shrub; later in the breeding season nests are placed above ground in low, thick shrubs or small trees (Walkinshaw 1968; Best 1978; Carey et al. 1994). This sparrow is a regular victim of Brown-headed Cowbird parasitism; Best (1978) reported that 11% of nests were

parasitized and 63% were then deserted in a study in Illinois. Having benefited from the clearing of forests and subsequent increased availability of early successional habitat, Field Sparrows may have been most abundant in the late 1800s (Carey et al. 1994). Although still abundant, Field Sparrow numbers are declining (Carey et al. 1994). The maturation of early successional habitat, loss of old fields to other land uses, such as agriculture and urban growth, and their susceptibility to parasitism by Brown-headed Cowbirds are factors that have contributed to the decline of Field Sparrow populations (Askins 2000).

**Illinois History**

The Field Sparrow of a century ago was considered “equally common with the Chipping Sparrow, and in many localities even more abundant” but “far less known on account of its more secluded habits” (Ridgway 1889). Cory (1909) described it as a common summer resident in Illinois. Graber and Graber (1963) reported that most of the summer population occurred in the southern part of the state in 1909 (75%) and in 1957 (62%) and that the statewide population declined during that interval.

**Breeding Bird Survey Trends**

The Field Sparrow is experiencing population declines in both Illinois and the upper Midwest. Trend estimates for both the state and region are significant and negative for 1966–2000 as well as both subintervals (1966–1979 and 1980–2000). Trends for 1966–2000 are estimated at –3.0% per year (significant,  $P < 0.01$ ) for both Illinois and the upper Midwest.

*Credibility Index:* IL = 1 and UM = 2.

**Distribution**

Field Sparrows were reported in priority blocks in all 102 counties during the atlas project. It was confirmed as breeding in 95 counties and may occur as a breeding species in most Illinois townships. This sparrow was among the most frequently reported species from priority blocks.

**Frequency**

The Field Sparrow was reported from 854 (85.6%) priority blocks and 128 nonpriority blocks. Breeding was Confirmed in 372 (37.3%) of the priority blocks, mostly by observations of adults feeding young (161 FY records) and fledged young (110 FL records). Nests for this species are not difficult to locate. It is likely that Field Sparrows bred in most blocks in which they were reported.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	372	37.3	43.6	438	34.1
Probable	295	29.6	34.5	334	26.0
Possible	187	18.7	21.9	210	16.3
Totals	854	85.6	100.0	982	76.4

\* 998 priority blocks

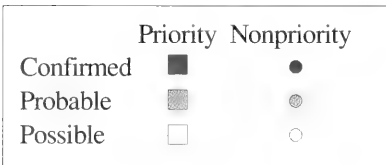
\*\* 1,286 total blocks (priority and nonpriority)



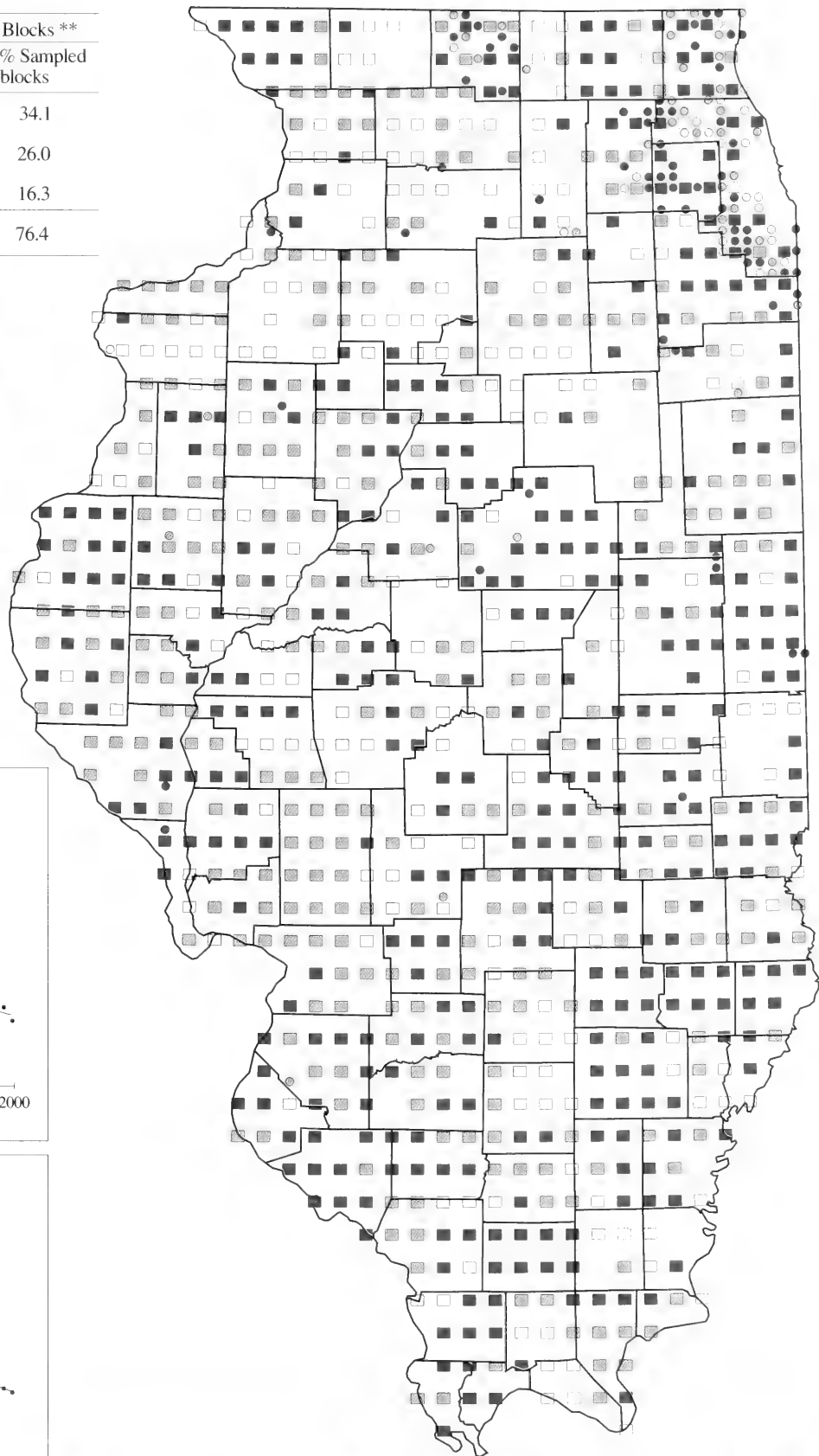
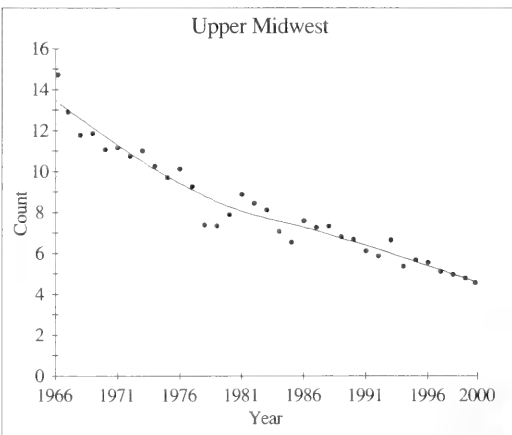
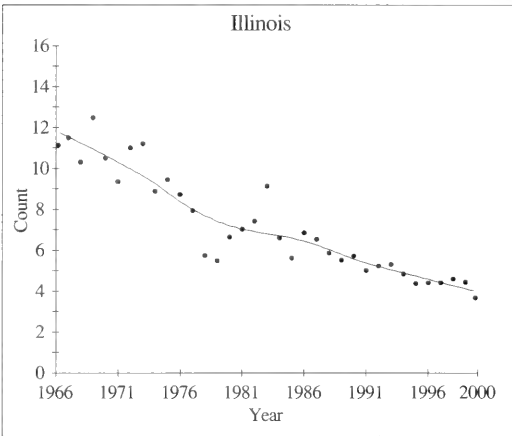
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Field Sparrow**



Chicago Academy of Sciences

**Code: VESP**

**Rangewide Distribution:** southern half of Canada, south through much of the U.S. to central Mexico.

**ILLINOIS**

**Abundance:** common migrant and summer resident in north, decreasing southward; very rare winter resident in south.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** grasslands, prairies, old fields, and mainly agricultural fields.

**Nest:** a bulky, loose cup of grass, forbs, and rootlets lined with finer materials and concealed by a mat of dead vegetation, on the ground.

**Eggs:** 3–4, creamy-white or pale greenish white, marked with browns.

**Incubation:** 11–13 days.

**Fledging:** from 7 to 14 days.

The Vesper Sparrow's breeding range includes much of the northern half of the U.S. and southern half of Canada. The common name "Vesper" refers to this species' habit of singing in the evening. Males are often seen singing from an elevated perch, such as a fence post or utility wire. The Vesper Sparrow is a medium to large sparrow with brown streaks and white outer tail feathers. It is a ground-dwelling species found in dry, open habitats with short, sparse, and patchy herbaceous vegetation, such as grasslands, old fields, pastures, and crop fields (Jones and Cornely 2002). Vesper Sparrows usually nest in a small hollow on the ground at the base of nonwoody vegetation, shrubs, and small trees, or beside dead branches or logs. Despite having well-hidden nests, Brown-headed Cowbirds regularly parasitize Vesper

Sparrow nests. During the 1800s its range expanded eastward with the clearing of the forests which created suitable nesting habitat but its breeding range and numbers have declined since the mid-1900s partly as a result of reforestation (Jones and Cornely 2002). The U.S. population has declined over the past three decades, as measured by the Breeding Bird Survey. Intensive farming practices that eliminate grassy habitats needed for nesting and agricultural practices that destroy ground nests negatively impact Vesper Sparrow populations (Jackson et al. 1996).

**Illinois History**

In the late 1800s the Vesper Sparrow was found throughout the state as a summer resident but was only common as a breeding species in the north (Ridgway 1889). Cory (1909) in the early 1900s referred to it as an abundant summer resident throughout the state. Despite changes to the landscape which should have benefited this species, such as creation of more open land and edge by agricultural development, the Vesper Sparrow population remained fairly constant in numbers and distribution in Illinois during the first half of the 1900s (Graber and Graber 1963).

**Breeding Bird Survey Trends**

For the period from 1966 to 2000 the trend for the Vesper Sparrow is estimated at  $-0.6\%$  per year (nonsignificant,  $P = 0.19$ ) for Illinois. BBS data indicate the decline in the Vesper Sparrow populations is  $-2.1\%$  per year (significant,  $P < 0.01$ ) for the upper Midwest for the period 1966 to 2000.

*Credibility Index: IL = 1 and UM = 1.*

**Distribution**

The Vesper Sparrow was found in priority blocks in 81 counties and mostly in the northern half of the state. Confirmed breeding was reported in 45 counties and was particularly concentrated in the east-central region (e.g., Champaign, Iroquois, McLean, and Vermilion). The number of occurrences in far southern Illinois (White, Hamilton, Gallatin, Madison, St. Clair and Jackson counties) was unexpected.

**Frequency**

The Vesper Sparrow was reported from 518 (51.9%) priority blocks and 46 nonpriority blocks. Breeding was Confirmed in 145 (14.5%) of the priority blocks, most frequently by observation of fledged young (94 FL records) and adults feeding young (33 FY records). It is likely that Vesper Sparrows bred in most blocks in which they were reported.

## Breeding Evidence

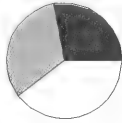
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	145	14.5	28.0	156	12.1
Probable	168	16.8	32.4	194	15.1
Possible	205	20.5	39.6	214	16.6
Totals	518	51.9	100.0	564	43.9

\* 998 priority blocks

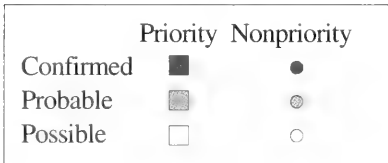
\*\* 1,286 total blocks (priority and nonpriority)



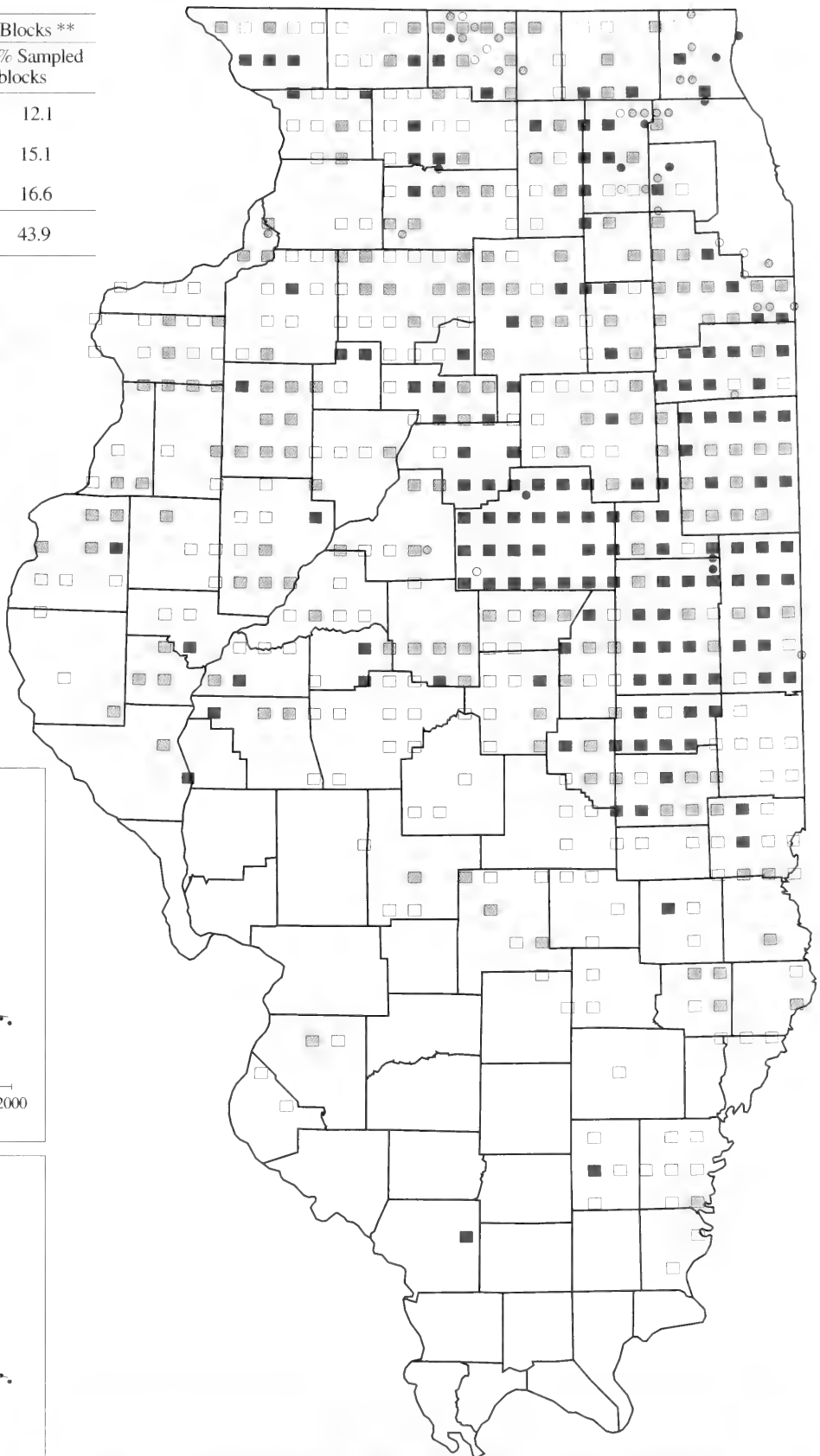
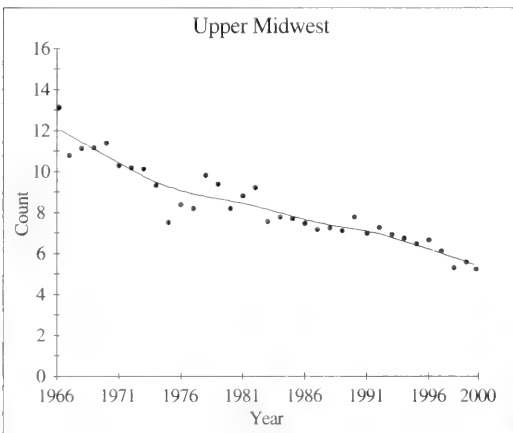
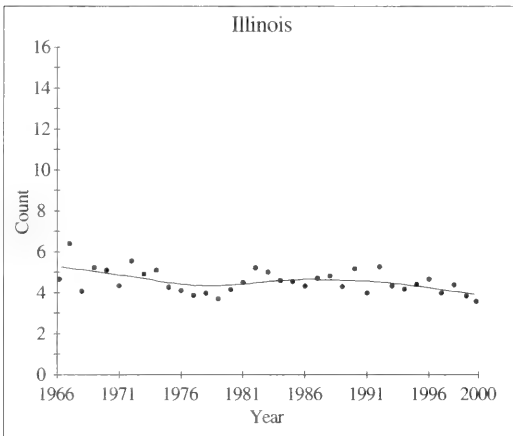
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Vesper Sparrow**



Joe Milosevich

**Code:** LASP

**Rangewide Distribution:** south-central Canada, south through central and western U.S. (from Ohio to the west coast) to southern Mexico.

**ILLINOIS**

**Abundance:** uncommon migrant and local summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** cultivated and sandy-soil fields, and strip-mined areas with scattered trees and shrubs.

**Nest:** a bulky cup of twigs, grass, and forbs lined with fine grass, on the ground or in a low shrub.

**Eggs:** 4–5, creamy to grayish white, marked with dark browns or blacks, often wreathed.

**Incubation:** 11–12 days.

**Fledging:** from 9 to 10 days.

The bold facial pattern of the Lark Sparrow makes it one of the most distinctive sparrows. It is widespread in open habitats with sparse ground cover and scattered shrubs and trees, including grasslands, farmland, pastures, fallow fields, roadsides, and sites disturbed by grazing or fire. Its breeding range is primarily the central and western U.S., adjacent parts of southern Canada, and northern Mexico. Lark Sparrows are ground feeders that forage for insects and seeds in the litter on the ground. Their courtship display is unique among passerine birds; the male struts turkey-like with its wings dragging the ground while holding its long tail erect and flashing the white tips to the female (Barlow 1960). Their well-concealed nests are built in a depression on the ground or in a shrub low to the ground. Lark Sparrows seem

to prefer sites with poor or sandy soil for nesting (Martin and Parrish 2000). Having benefited from the clearing of the eastern forests during the 19th century, the Lark Sparrow's breeding range expanded to the northern and central Atlantic states. The range is now receding from the East as forest regeneration and urbanization take place; its current range is probably more like that of presettlement times (Martin and Parrish 2000). Loss of habitat caused in part by intensive agricultural production has contributed to the recent decline in eastern populations (Jackson et al. 1996).

**Illinois History**

Ridgway (1889) reported that the Lark Sparrow could be "found abundantly in all suitable localities" and especially favored cornfields in the late 1800s. Cory (1909) stated that it was a more or less common summer resident, more numerous in the western than in the eastern part of the state, and rather local in distribution. The estimated population dropped from 500,000 in 1909 to 80,000 in 1957, and had shifted from the south to central part of the state (Graber and Graber 1963).

**Breeding Bird Survey Trends**

The long-term (1966–2000) trend estimates for the Lark Sparrow population are –6.9% per year (nonsignificant,  $P = 0.06$ ) for Illinois and –3.1% per year (nonsignificant,  $P = 0.09$ ) for the upper Midwest.

*Credibility Index:* IL = 2 and UM = 2.

**Distribution**

Lark Sparrows are closely associated with sandy and poor soil areas in the state (Bohlen 1989). During the atlas project Lark Sparrows were reported in priority blocks in 59 counties, with Confirmed breeding records in 32 of them. They were concentrated in the west-central part of the state and found to a lesser extent in the southeast. The records in White and Hamilton counties were not expected and perhaps represent an expansion into the sandy soils associated with the Wabash River.

**Frequency**

The Lark Sparrow was reported from 154 (15.4%) priority blocks and 16 nonpriority blocks. Breeding was Confirmed in 59 (5.9%) of the priority blocks, with the most frequently used breeding evidence being fledged young or adults feeding young (23 FL and 22 FY records, respectively). It is likely that the Lark Sparrow bred in many of the blocks in which it was reported.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	59	5.9	38.3	68	5.3
Probable	33	3.3	21.4	38	3.0
Possible	62	6.2	40.3	64	5.0
Totals	154	15.4	100.0	170	13.2

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

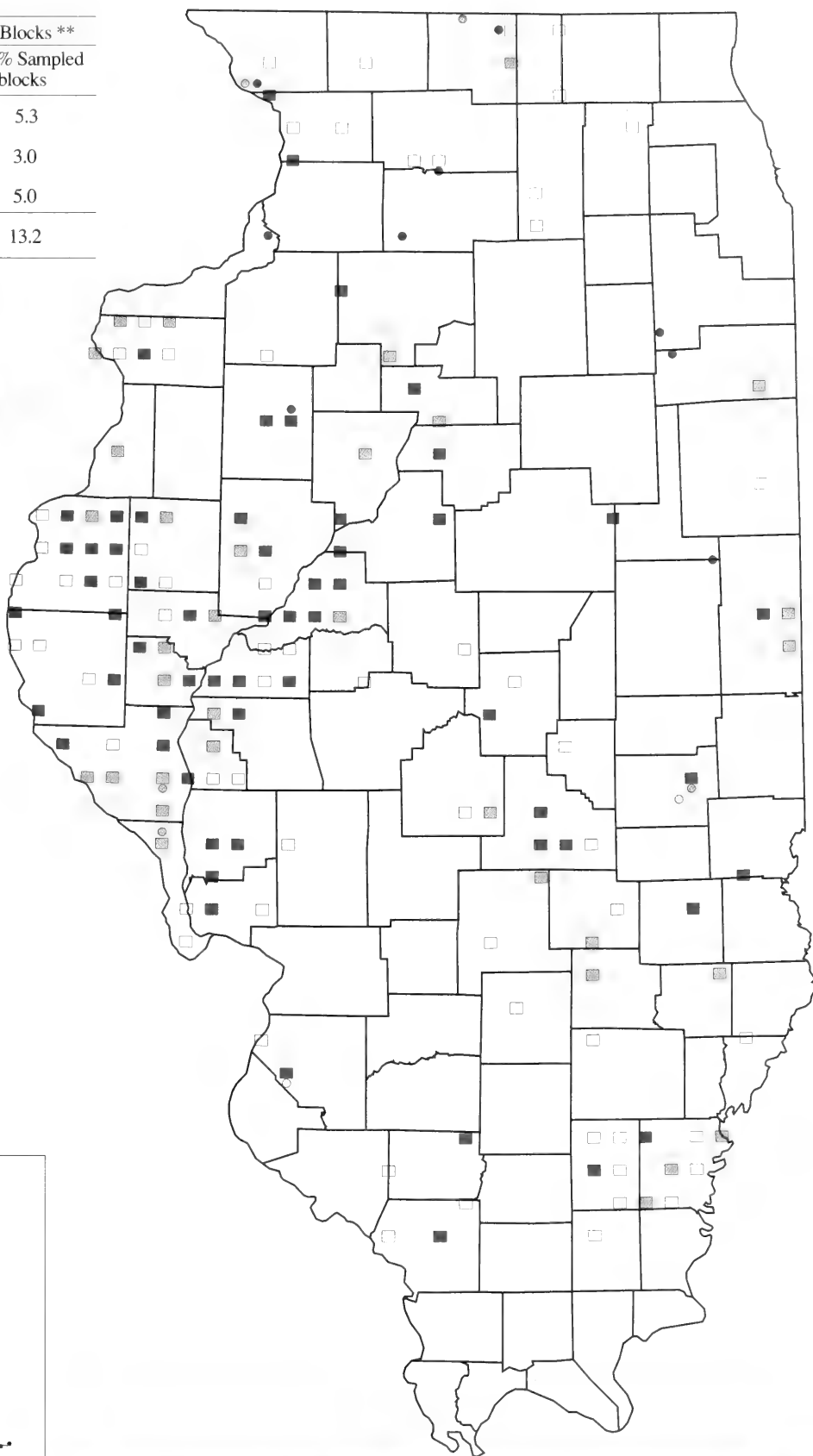


% of 998 sampled priority blocks (gray = no records for this species)

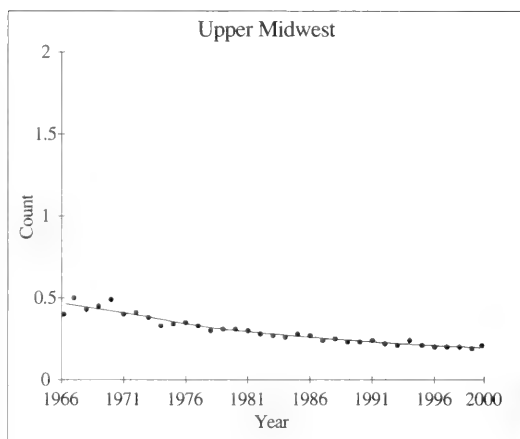


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



## Breeding Bird Survey Trends



**Lark Sparrow**



## Savannah Sparrow

## *Passerculus sandwichensis*



Eric Walters

### **Code:** SASP

**Rangewide Distribution:** from northern Alaska and Canada to Honduras.

### **ILLINOIS**

**Abundance:** common migrant and fairly common summer resident in north, decreasing southward; uncommon winter resident in south, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open grassy areas, meadows, airports, and pastures.

**Nest:** a cup of coarse grass lined with finer materials, in a depression on the ground.

**Eggs:** 3–5, pale greenish blue or off-white, marked with brown, occasionally wreathed.

**Incubation:** 12–13 days.

**Fledging:** from 7 to 10 or more days.

ground feeder, eating invertebrates in the breeding season and seeds in the winter. Males utilize an elevated perch, such as a fence post, tall shrub, or utility wire, from which to sing their weak, buzzy song. Nests are placed on the ground, typically in grassy areas away from woody vegetation; many are completely covered with grasses and have an entrance hole (Wheelwright and Rising 1993). Open habitat created by forest clearing in the 1800s and the early 1900s probably supported historically high abundances in the East, but reforestation and urbanization in more recent times have led to declines in the Northeast and Great Lakes region (Wheelwright and Rising 1993).

### **Illinois History**

The Savannah Sparrow was a common summer resident in northern Illinois in the late 1800s and early 1900s (Cory 1909). Graber and Graber (1963) reported that the numbers of this species increased between 1909 and 1957 despite a loss in pasture land; the greatest portion of the population for both periods was in the northern third of the state. Densities during 1957–1958 were generally greater than those found in the early part of the century (Graber and Graber 1963).

### **Breeding Bird Survey Trends**

The populations of the Savannah Sparrow experienced declines in both Illinois and the upper Midwest from 1966 to 2000. Trends estimates are  $-6.0\%$  per year (significant,  $P = 0.01$ ) and  $-1.1\%$  per year (significant,  $P = 0.03$ ) for Illinois and the upper Midwest, respectively.

*Credibility Index:* IL = 2 and UM = 1.

### **Distribution**

The Savannah Sparrow population was concentrated in northern and east-central Illinois, with scattered records in the western and southern parts of the state. This sparrow was reported in priority blocks in 66 counties and Confirmed in 33 during the atlas project. The Confirmed records in White and Hamilton counties were farther south than expected.

### **Frequency**

The Savannah Sparrow was reported from 326 (32.7%) priority blocks and 88 nonpriority blocks. Breeding was Confirmed in 95 (9.5%) of the priority blocks; nearly half the Confirmed records in priority blocks were observations of adults feeding young (47 FY records). It is likely that the Savannah Sparrow nested in many of the blocks in which it was reported. It is also likely that because of its similarity to the Song Sparrow and the weakness of its song, the Savannah Sparrow may have been misidentified or overlooked.

The Savannah Sparrow is an inconspicuous, secretive bird that stays hidden in the grass and runs instead of flying away. It is often difficult to find and observe. The Savannah Sparrow looks like a slender Song Sparrow but has pinker legs and a proportionally shorter tail. Its breeding range, one of the most extensive among North American sparrow species, extends throughout the continent from the tundra above the Arctic Circle to the southern tier of states. The Savannah Sparrow is a grassland species that is found in open habitats, such as agricultural fields, grasslands, roadsides, meadows, and marshes. This species is generally a



## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	95	9.5	29.1	125	9.7
Probable	116	11.6	35.6	154	12.0
Possible	115	11.5	35.3	135	10.5
Totals	326	32.7	100.0	414	32.2

\* 998 priority blocks

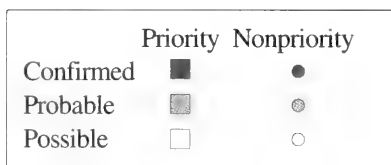
\*\* 1,286 total blocks (priority and nonpriority)



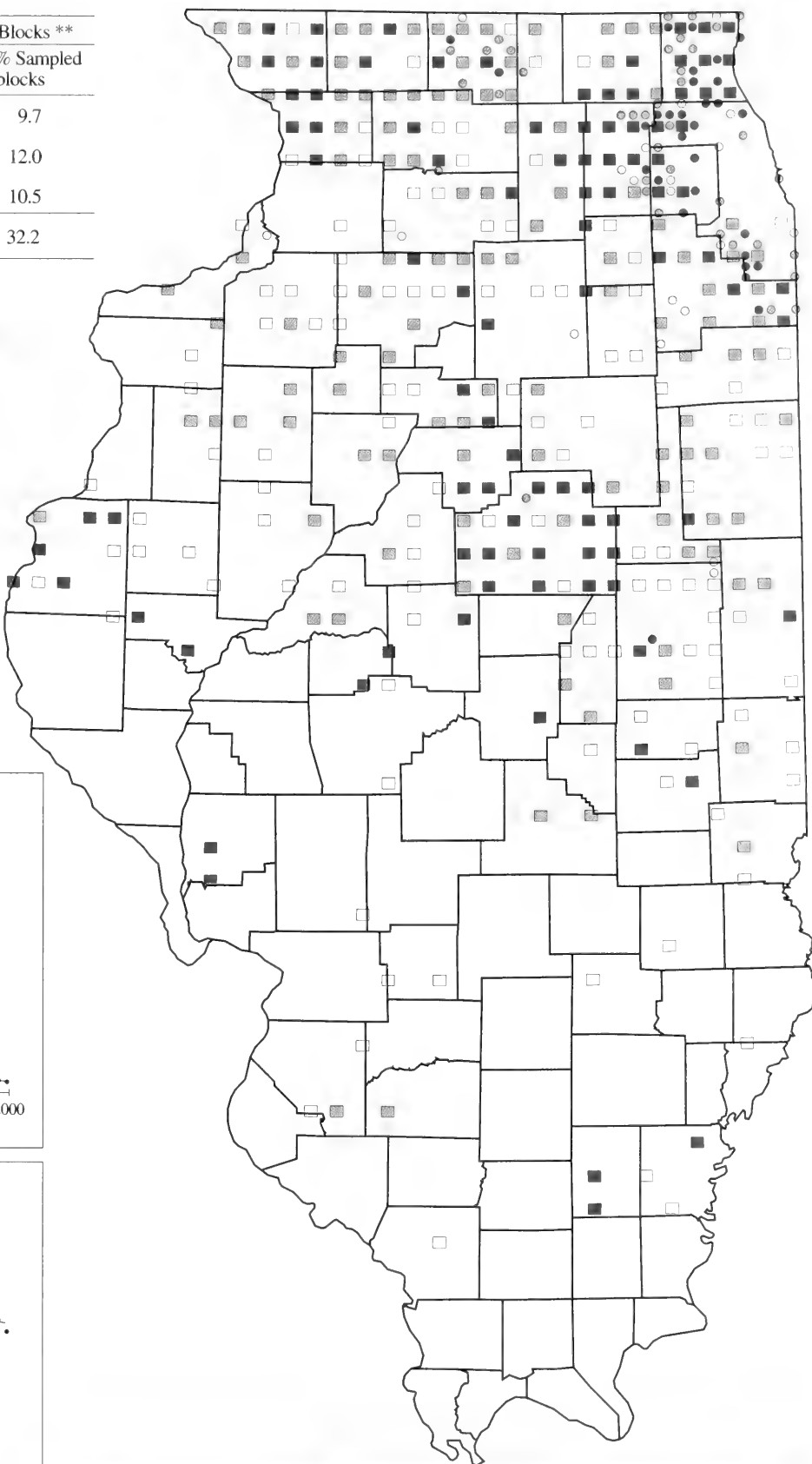
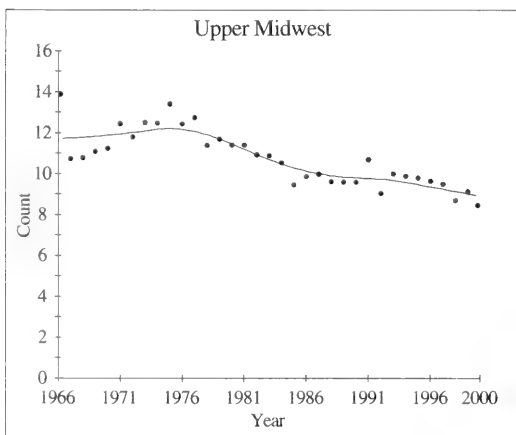
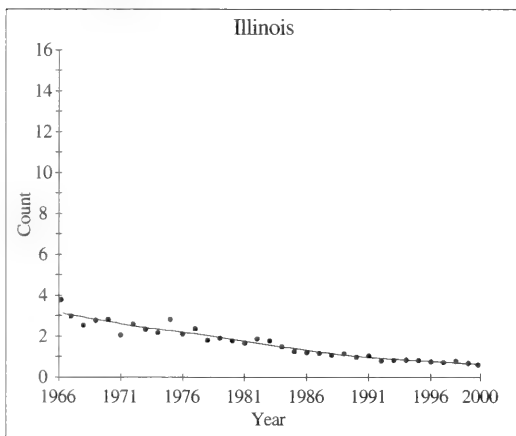
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Savannah Sparrow**



Robert Randall

**Code: GRSP**

**Rangewide Distribution:** far southern Canada and most of the U.S. except the southwest, south to northwestern South America

**ILLINOIS**

**Abundance:** fairly common migrant and summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** grasslands, prairies, old fields, airports, and savannas.

**Nest:** a cup of dried grass lined with finer materials, in a depression on the ground (often with overhanging grass and forbs).

**Eggs:** 4–5, creamy white, marked with reddish brown, occasionally wreathed.

**Incubation:** 11–12 days.

**Fledging:** about 9 days.

The Grasshopper Sparrow has an extensive range that includes much of the eastern, central, and northwestern U.S. and extreme southern Canada, but its distribution is localized. This species inhabits open grasslands and prairies with patches of bare ground and without extensive shrub cover. It prefers larger tracts of habitat; Herkert (1994a) estimated the minimum required area at about 75 acres in Illinois. Males vigorously defend their territories by singing their buzzy, insect-like songs from conspicuous perches, flight displays, and chasing intruding males. Unlike most North American sparrows, Grasshopper Sparrows sing completely different songs—a primary song for establishing territory and a sustained song for attracting a mate and maintaining the pair bond (Vickery 1996). Grasshopper Sparrows build domed nests on the ground covered by overhanging grasses and are

multibrooded. Extensive loss of native prairies contributed to population declines in the 1800s and early 1900s. Since the mid-1900s, populations have drastically declined in the U.S. (Vickery 1996). Conversion of grasslands to row crop agriculture, loss of hayfields and pastures, and lack of disturbance factors (e.g., moderate grazing or fire) in grasslands that help maintain the vegetative structure that they require have contributed to population declines in the past half century (Vickery 1996).

**Illinois History**

In the late 1800s the Grasshopper Sparrow was “abundant in all cultivated portions of the State, as well as on the open prairies” (Ridgway 1889). During the early 1900s, it was still a common summer resident (Cory 1909). Graber and Graber (1963) found that the Grasshopper Sparrow population was higher in 1957 than in 1909, with the majority of birds occurring in the central portion of the state during both census periods.

**Breeding Bird Survey Trends**

BBS data indicate that the Grasshopper Sparrow is experiencing a significant long-term decline in Illinois and the upper Midwest. The trend estimates for 1966–2000 and for both subinterval periods (1966–1979 and 1980–2000) are negative and significant for both the state and the region. From 1966 to 2000 the trends are estimated at –7.0% per year (significant,  $P < 0.01$ ) for Illinois and –5.6% per year (significant,  $P < 0.01$ ) for the upper Midwest.

*Credibility Index: IL = 1 and UM = 1.*

**Distribution**

The Grasshopper Sparrow was found in priority blocks in 100 counties and Confirmed as breeding in 63 of them during the atlas project. It was reported most frequently from priority blocks in the central portion of the state and less frequently in both the northern and southern portions. Grasshopper Sparrows probably nest in all Illinois counties.

**Frequency**

The Grasshopper Sparrow was reported from 716 (71.7%) priority blocks and 60 nonpriority blocks. Breeding was Confirmed in 171 (17.1%) of the priority blocks. These birds were readily detected by their buzzy songs, but confirmation of breeding was difficult to achieve. About one-fourth of the records were Confirmed; however, they probably nested in most of the blocks in which they were reported. Breeding evidence criteria most frequently used for Confirmed records in priority blocks were adults feeding young (74 FY records), fledged young (44 FL records), and occupied nest (28 ON records).

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	171	17.1	23.9	192	14.9
Probable	294	29.5	41.1	322	25.0
Possible	251	25.2	35.1	262	20.4
Totals	716	71.7	100.0	776	60.3

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



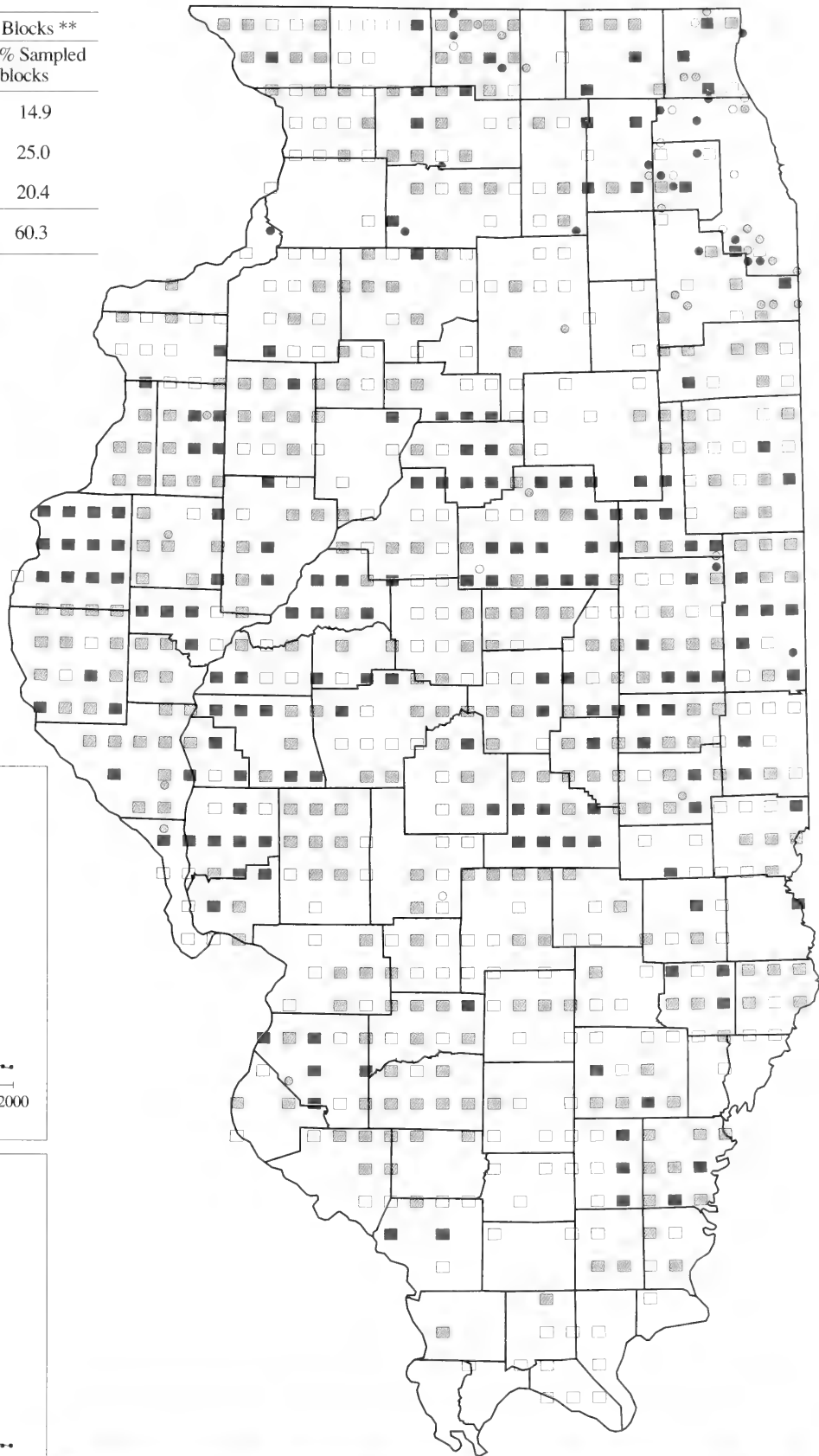
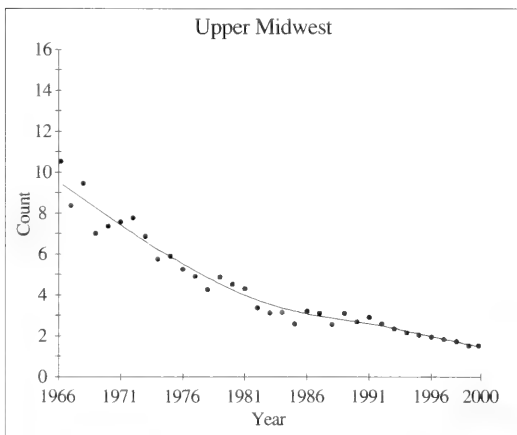
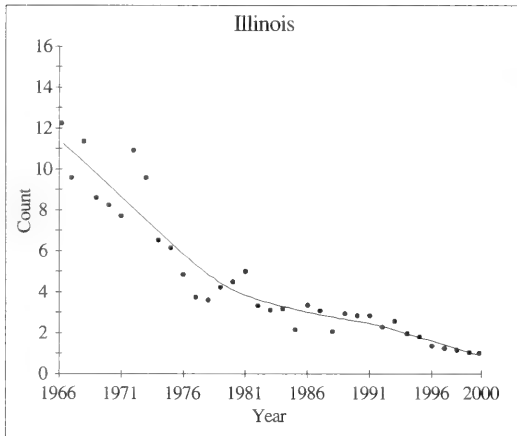
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○

## Breeding Bird Survey Trends



**Grasshopper Sparrow**



Joe Milosevich

**Code:** HESP

**Rangewide Distribution:** eastern U.S. from the Great Lakes region to Texas and Florida.

**ILLINOIS**

**Abundance:** uncommon migrant and summer resident.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** fields and meadows with a combination of grasses and forbs.

**Nest:** a cup of coarse grass and forbs lined with finer materials, on or very close to the ground.

**Eggs:** 3–5, creamy or pale greenish white, marked with reddish brown, often wreathed.

**Incubation:** 11 days.

**Fledging:** from 9 to 10 days.

The Henslow's Sparrow was once common on the native prairies of the Midwest and wet grasslands in the eastern U.S. The present breeding distribution is highly localized and limited to the northern region of the eastern half of the U.S., where it inhabits prairie remnants, unmowed hayfields, pastures, and cultivated grasslands, preferring areas with tall, dense grass and a thick layer of ground litter. These birds most often utilize large fields with little or no woody vegetation (Herkert 1994b; Pruitt 1996; Herkert et al. 2002). This secretive and elusive species is difficult to hear or see; its song is weak and sung from low perches on shrubs, grasses, and forbs. It is known to sing at night. Henslow's Sparrows nest in isolated pairs or in small, loose colonies. Nests are usually placed in thick litter close to the ground. Henslow's Sparrows can be distinguished from the similar Grasshopper Sparrow by their shorter song and the shorter length of time that their heads are tilted back when singing. Loss of grassland habitat is the major cause of the long-term population decline of this species and more recently the

conversion of hayfields and pastures to row crops (Pruitt 1996; Herkert et al. 2002). The creation of large undisturbed grassland areas by the Conservation Reserve Program that began in the 1980s appears to benefit local populations (Herkert et al. 2002). In recent decades, the Henslow's Sparrow population has declined significantly in the U.S., according to Breeding Bird Survey data.

**Illinois History**

In the 19th century the Henslow's Sparrow was described as "an exceedingly common or even abundant species in Illinois, but is much more local than . . . the Grasshopper Sparrow" (Ridgway 1889) and "a rather common summer resident in suitable localities" (Cory 1909). The Henslow's Sparrow was not detected in sufficient numbers during either the 1907–1909 or 1957–1958 censuses to warrant comment (Graber and Graber 1963). Due to extensive destruction of its grassland nesting habitat and severe reductions in its population during the 1900s, the Henslow's Sparrow was listed as a threatened species in Illinois in 1977 and changed to endangered status in 1994. The population in Illinois declined during the 1970s and 1980s but has increased in the 1990s (Herkert et al. 2002).

**Breeding Bird Survey Trends**

The Illinois population of Henslow's Sparrow is so small and localized that the BBS does not adequately sample it. The upper Midwest population experienced a decline of –6.2% per year (significant,  $P = 0.01$ ) from 1966 to 2000. *Credibility Index:* IL = none and UM = 2.

**Distribution**

The Henslow's Sparrow is an extremely difficult bird to find. During the atlas project it was reported in priority blocks in eight counties and Confirmed in four of those counties. More recently it has been found in many more locations statewide. Although still a species in jeopardy, the Henslow's Sparrow appears to be more widespread and common today than it was in the 1980s and early 1990s.

**Frequency**

The Henslow's Sparrow was reported from 11 (1.1%) priority blocks and 11 nonpriority blocks. Breeding was Confirmed in 5 of the priority blocks by observation of fledged young, adults feeding young, and occupied nest (FL, FY, and ON, respectively). Henslow's Sparrows almost always need to be located by their singing from elevated perches and even then they are not easily observed. It is likely that Henslow's Sparrows nested in the majority of the blocks in which they were reported and probably occur more widely than indicated by the atlas data.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	5	0.5	45.5	7	0.5
Probable	2	0.2	18.2	7	0.5
Possible	4	0.4	36.4	8	0.6
Totals	11	1.1	100.0	22	1.7

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)

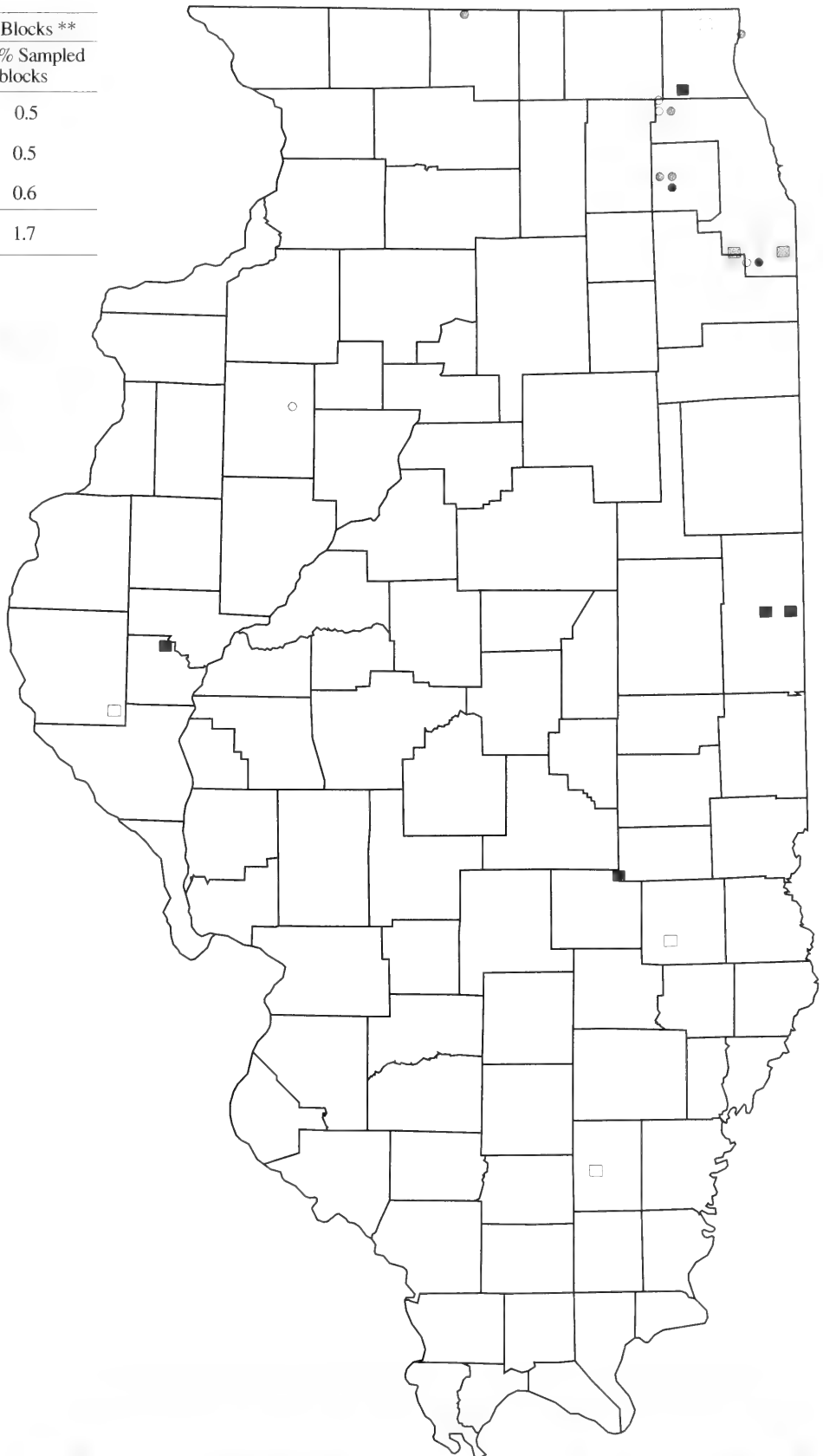


% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Henslow's Sparrow**



Dennis Oehmke

**Code: SOSP**

**Rangewide Distribution:** southern Alaska and the southern half of Canada, south through all of the U.S. to central Mexico.

**ILLINOIS**

**Abundance:** common migrant, summer resident and winter resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** dense vegetation along forest edges, clearings, gardens or shrubbery in residential areas, edges of wetlands.

**Nest:** a cup of grass, forbs, leaves, and bark strips lined with finer materials, on the ground or in a low shrub or brushpile.

**Eggs:** 3–4, pale blue to greenish white, marked with reddish browns.

**Incubation:** 12–14 days.

**Fledging:** from 9 to 12 or more days.

The Song Sparrow is familiar, common, and widespread in its breeding range, which includes the southern half of Canada, the U.S. except for the southern states east of Arizona, and parts of Mexico. This species generally inhabits shrubby areas near water in rural and suburban environments, including forest edges, roadside ditches, marshes, hedgerows, pastures, and parks. The Song Sparrow is aptly named for its distinctive musical song that can be heard from early spring through late summer. Most nests are built on or near the ground under tufts of grass or in shrubs, and sometimes in trees and bushes as high as 12 feet above ground. Song Sparrows are considered to be monogamous but some of the young are from males outside the social pair,

indicating that simultaneous and serial polygamy occur (Arcese et al. 2002). Song Sparrows are a common host species for the Brown-headed Cowbird; the rate of parasitism is reported to be more than 20% in the upper Midwest (Arcese et al. 2002). The populations benefited from the clearing of the forests for agriculture by inhabiting hedgerows and early successional habitats when agricultural lands were later abandoned.

**Illinois History**

The Song Sparrow's distribution as a breeding species in the state in the late 1800s was limited to the extreme northern part of Illinois (Ridgway 1889). In the early 1900s Cory (1909) considered it an abundant summer resident in the state without reference to north or south. Graber and Graber (1963) noted that the summer population had probably increased between 1909 and 1958 and that Song Sparrows did not occur in the southern zone during the summer in the 1907–1909 breeding censuses. The losses of certain types of habitat (e.g., marshes, orchards, and pasture) were apparently balanced by the increase in forest edge (Graber and Graber 1963).

**Breeding Bird Survey Trends**

During the period 1966 to 2000, the trends for the Song Sparrow population are estimated at 0.1% per year (nonsignificant,  $P = 0.82$ ) for Illinois and 0.4% per year (significant,  $P = 0.04$ ) for the upper Midwest. For both the state and region, significantly negative trend estimates during the period 1966–1979 were followed by significantly positive estimates for 1980–2000.

**Credibility Index:**  $IL = 2$  and  $UM = 2$ .

**Distribution**

During the atlas project, the Song Sparrow was found in priority blocks in all counties and Confirmed as breeding in nearly all of them. Although they were not a summer resident in southern Illinois a century ago, Song Sparrows are a common breeding resident there now. It was one of the most frequently reported species from priority blocks (Table 4).

**Frequency**

The Song Sparrow was reported from 960 (96.2%) priority blocks and 172 nonpriority blocks. Breeding was Confirmed in 557 (55.8%) of the priority blocks, primarily by observation of adults feeding young (251 FY records) and fledged young (160 FL records). The Song Sparrow was relatively easy to find and confirm. It is likely that the Song Sparrow nested in most of the blocks in which it was found.

## Breeding Evidence

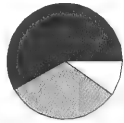
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	557	55.8	58.0	665	51.7
Probable	310	31.1	32.3	358	27.8
Possible	93	9.3	9.7	109	8.5
Totals	960	96.2	100.0	1,132	88.0

\* 998 priority blocks

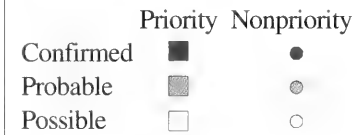
\*\* 1,286 total blocks (priority and nonpriority)



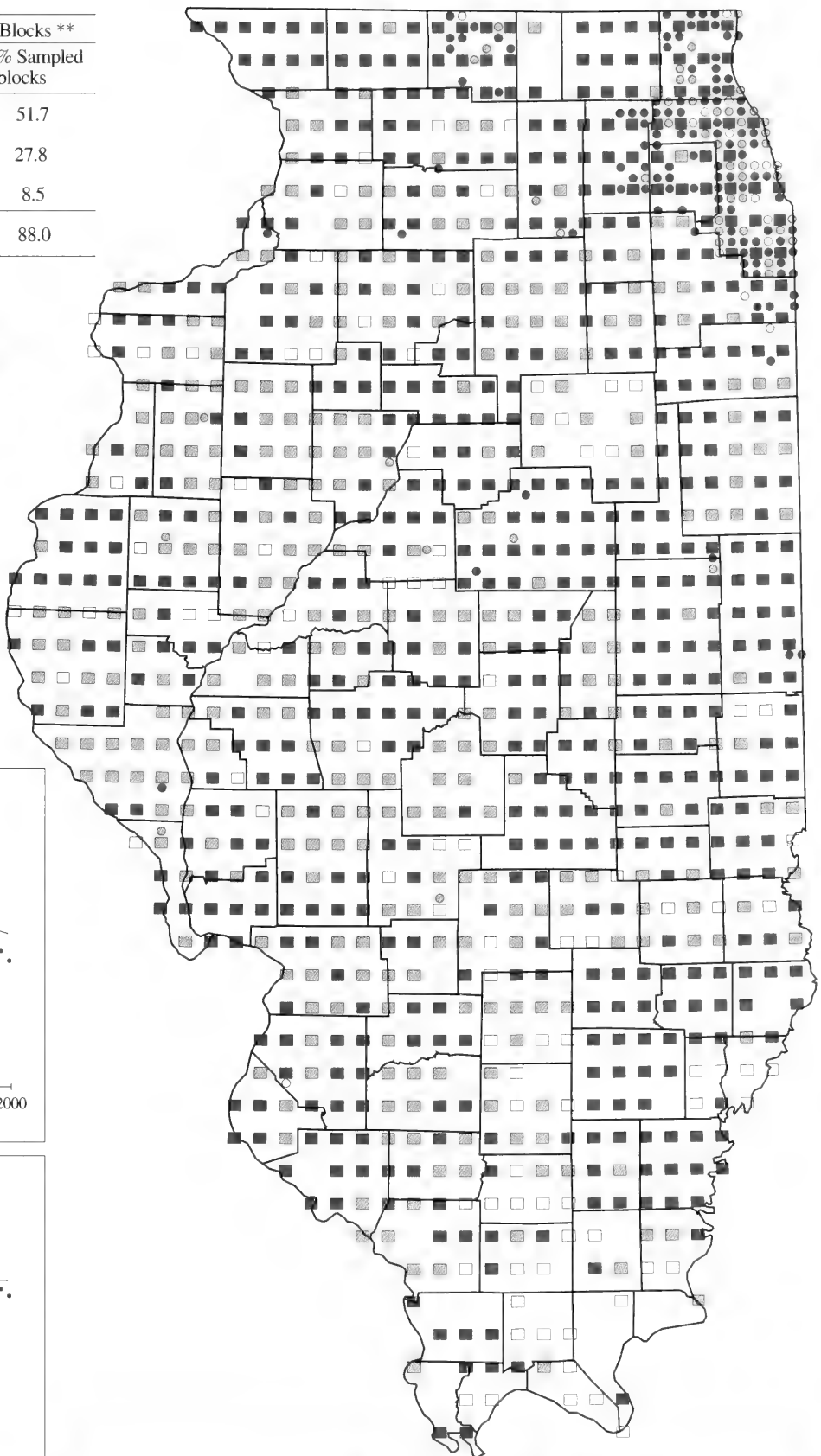
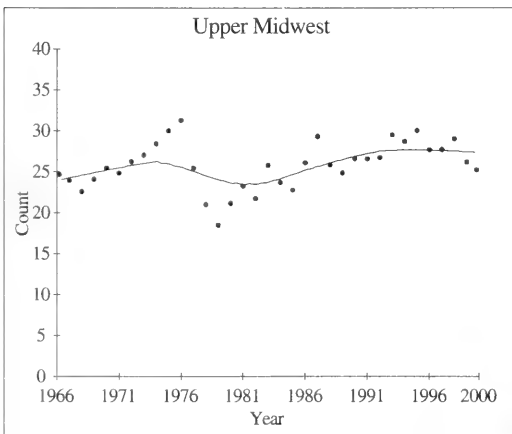
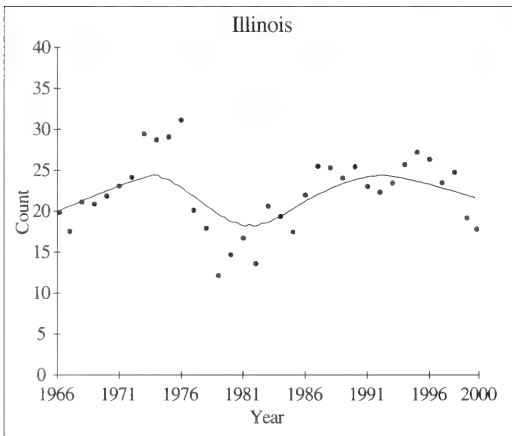
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Song Sparrow**





Robert Randall

## Code: SWSP

**Rangewide Distribution:** central and southeastern Canada, south through the U.S. east of the Rockies to central Mexico, and the West Coast of the U.S.

## ILLINOIS

**Abundance:** common migrant, uncommon summer resident in north, decreasing southward; fairly common winter resident, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** emergent vegetation around water, marshes, wet meadows.

**Nest:** a bulky cup of coarse grass lined with finer grasses, in a low bush or shrub, often over water.

**Eggs:** 4–5, pale green to greenish white, marked with reddish browns.

**Incubation:** 12–15 days.

**Fledging:** from 11 to 13 days.

Swamp Sparrows breed in the north-central and northeastern U.S. and much of Canada. They inhabit a variety of wetland types, such as marshes, swamps, and wet meadows, and commonly occur in cattails or other brushy and grassy edges and thickets near water. In the breeding season Swamp Sparrows forage for insects and other invertebrates in and along the water's edge and on moist ground or in shrubs. Its song is similar to the trill of a junco or Chipping Sparrow.

Nests are usually placed in clumps of grass or in marsh vegetation such as cattails close to the ground or the surface of the water and are consequently subject to flooding and predation (Mowbray 1997). Since Euro-American settlement, the Swamp Sparrow population has certainly declined throughout its range due to the loss of its wetland habitat.

## Illinois History

During the late 1800s, the Swamp Sparrow was known to breed in the northern portion of the state, but how far south it occurred was unknown (Ridgway 1889). Cory (1909) indicated that it was a common summer resident in Illinois without comment about northern or southern distribution. The Swamp Sparrow population in Illinois has undoubtedly declined as a result of the loss of approximately 90% of the wetlands in the state since Euro-American settlement.

## Breeding Bird Survey Trends

The Swamp Sparrow population in Illinois is not adequately sampled by the BBS. The trend estimate for 1966–2000 is –4.9% per year (significant,  $P < 0.01$ ); however, sample size is small and relative abundance is low. For the upper Midwest, BBS data indicate an increase in population of 2.1% per year (significant,  $P < 0.01$ ) from 1966 to 2000.

*Credibility Index: IL = 3 and UM = 1.*

## Distribution

The Swamp Sparrow was reported in priority blocks in 30 counties, with breeding Confirmed in 12 of them. Most of the records were in the north—Cook, DuPage, Kane, Lake, McHenry, Will, and Winnebago counties. The scattered occurrences in the southern two-thirds of Illinois, especially the southernmost records (Edwards, St. Clair, Wabash, and White counties) were unexpected.

## Frequency

The Swamp Sparrow was reported from 88 (8.8%) priority blocks and 80 nonpriority blocks. Breeding was Confirmed in 30 (3.0%) of the priority blocks, primarily by observations of fledged young or adults feeding young (12 FL and 10 FY records). Due to the difficulty in accessing wetland habitats, this species was likely underrepresented during the atlas project and probably nested in more blocks than those reported.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	30	3.0	34.1	57	4.4
Probable	25	2.5	28.4	59	4.6
Possible	33	3.3	37.5	52	4.0
Totals	88	8.8	100.0	168	13.1

\* 998 priority blocks

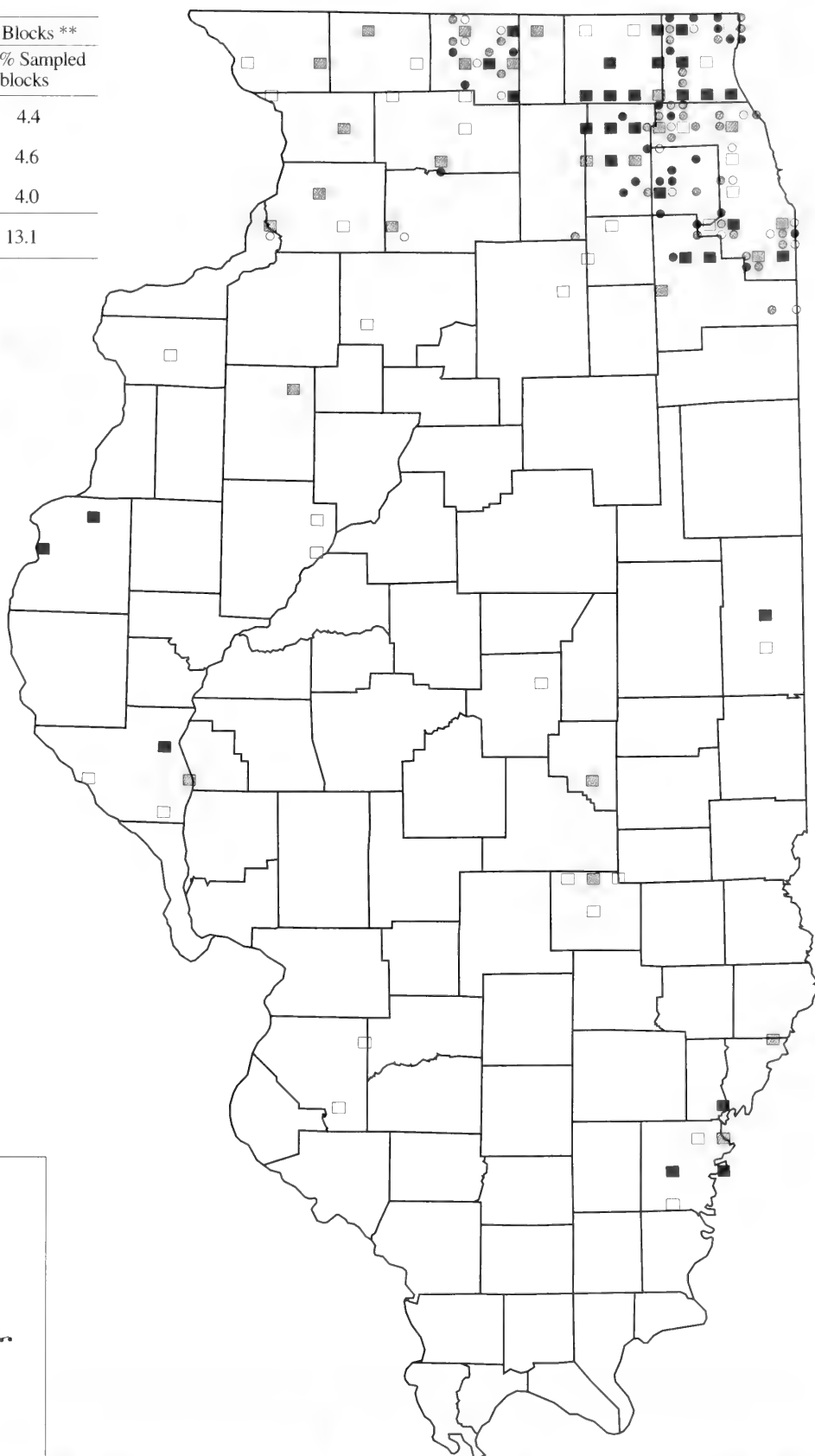
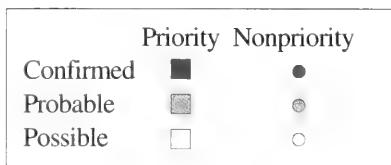
\*\* 1,286 total blocks (priority and nonpriority)



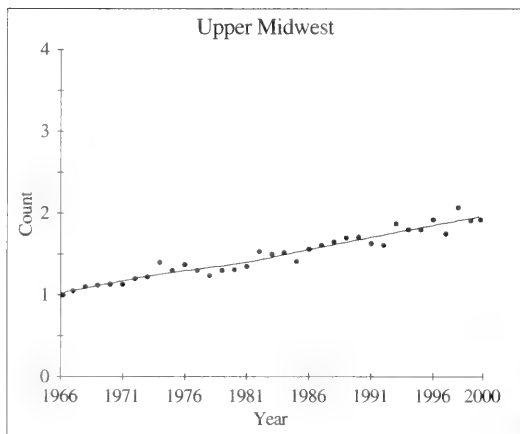
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Swamp Sparrow**



Richard Day / Daybreak Imagery

**Code: NOCA**

**Range-wide Distribution:** central and eastern U.S. from Canada south through Mexico.

**ILLINOIS**

**Abundance:** common permanent resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** thickets, dense shrubs, undergrowth, residential areas.

**Nest:** a cup (compact or flimsy) of weed stems, pliable twigs, bark strips, grass, rootlets, and leaves lined with fine grass and hair, in a shrub or sapling.

**Eggs:** 3–4, grayish, bluish, or greenish white, marked with browns, grays or purples.

**Incubation:** 12–13 days.

**Fledging:** from 9 to 10 days.

The Northern Cardinal is one of the most common and well-known songbirds in North America; it is also the state bird of Illinois. It is a year-round resident of the eastern and central U.S. and parts of Mexico. The cardinal was primarily a southern species; its range expanded northward beginning in the early 1800s in response to factors such as a warmer climate, man-made changes to the landscape that have created additional suitable habitat, and the presence of bird feeders in the winter (Halkin and Linville 1999). It is found in a wide range of habitats with shrubs or small trees, including woodland edge and interior, thickets, brushy areas, and residential areas. The male's loud and clear "what cheer, what cheer, what cheer" can be heard long before spring

arrives. Unlike most songbirds, the female is also an active singer. Cardinals have a long breeding season with multiple broods each year. Nests are placed in woody vegetation with dense foliage, such as vines, shrubs, ornamental bushes, and small trees usually about 4 to 5 feet from the ground (Graber and Graber 1963; Halkin and Linville 1999). According to Filliater and Breitwisch (1997) and Wolfenbarger (1999), males with brighter red color hold better territories and have greater reproductive success.

**Illinois History**

In the late 1800s the Northern Cardinal was a permanent resident except possibly in the extreme northern portion of the state (Ridgway 1889). In the early 1900s it was considered a very common permanent resident in southern Illinois but a rather uncommon summer resident in northern Illinois (Cory 1909). The statewide population increased between 1909 and 1957 and although most of the population was still in the southern part of the state in 1957, the populations in the central and northern parts had greatly increased by the 1950s (Graber and Graber 1963).

**Breeding Bird Survey Trends**

The trend estimate for the Northern Cardinal population in Illinois during the period 1966 to 2000 is 0.6% per year (nonsignificant,  $P = 0.18$ ). The trend estimate for the upper Midwest for the same period is 0.7% per year (significant,  $P < 0.01$ ).

*Credibility Index: IL = 1 and UM = 1.*

**Distribution**

The Northern Cardinal was reported in priority blocks in all 102 counties. The cardinal probably occurs as a nesting species in all priority blocks, even in northern Illinois where it was once scarce. It was one of the most frequently reported and widespread species in priority blocks during the atlas project (Table 4).

**Frequency**

The Northern Cardinal was reported from 973 (97.5%) priority blocks and 182 nonpriority blocks. Breeding was Confirmed in 671 (67.2%) of the priority blocks; the breeding evidence for about two-thirds of these records was fledged young (233 FL records) and adults feeding young (229 FY records). Because cardinals are nonmigratory, it is very likely that they nested in all blocks in which they were recorded.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	671	67.2	69.0	807	62.8
Probable	248	24.8	25.5	285	22.2
Possible	54	5.4	5.5	63	4.9
Totals	973	97.5	100.0	1,155	89.8

\* 998 priority blocks

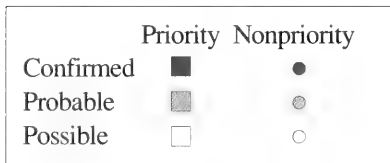
\*\* 1,286 total blocks (priority and nonpriority)



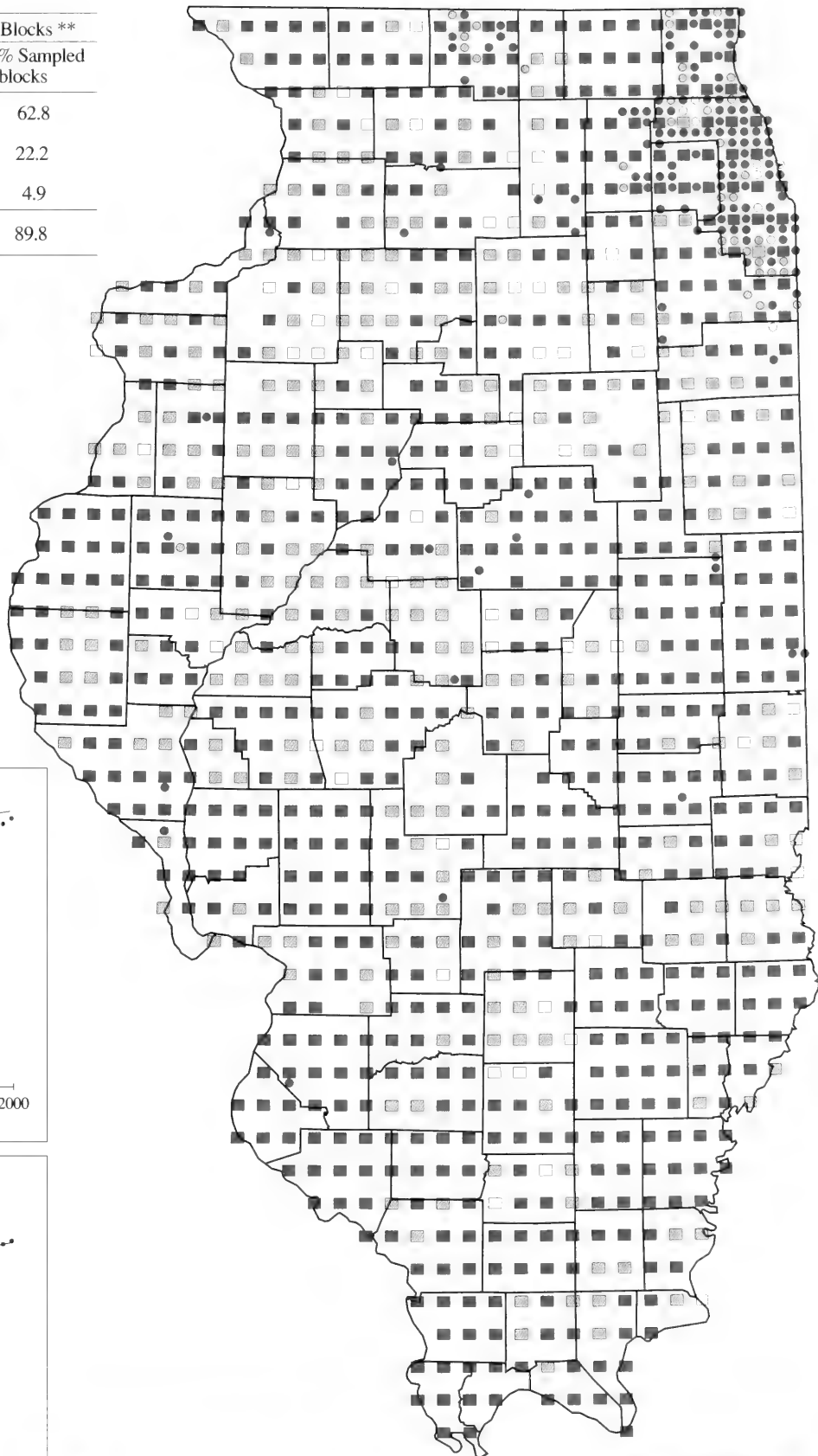
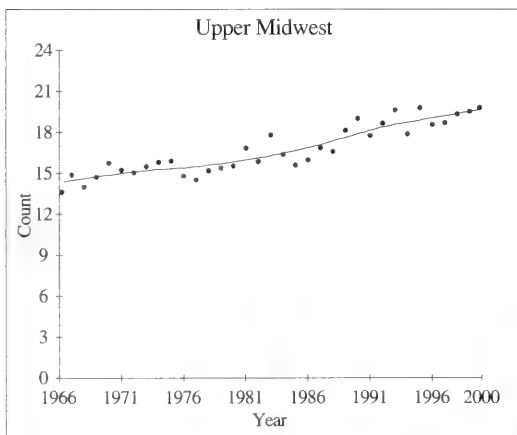
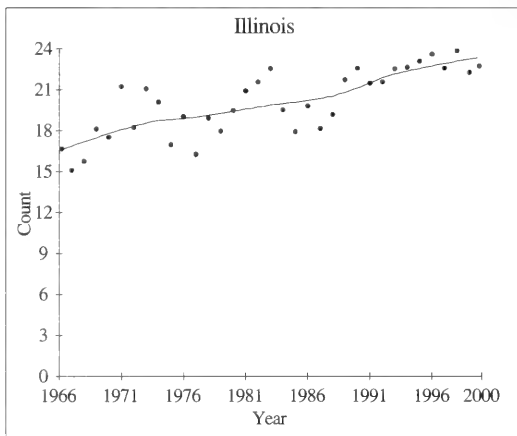
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Northern Cardinal**



Dennis Oehmke

**Code: RBGR**

**Rangewide Distribution:** western and southeastern Canada, south through the U.S. east of the Rockies to northwestern South America.

**ILLINOIS**

**Abundance:** common migrant and fairly common summer resident in north, decreasing southward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** second-growth forests and woodlands.

**Nest:** a loosely built cup of twigs and coarse plant material lined with fine twigs, rootlets, and hair in a deciduous tree.

**Eggs:** 4, pale green, blue, or bluish green, marked with browns or purples, usually wreathed.

**Incubation:** 13–14 days.

**Fledging:** from 9 to 12 days.

The Rose-breasted Grosbeak breeds in the northern part of the eastern and central U.S. and in southeastern and central Canada. The male is one of the most distinctive birds in North America; its black back and white underparts contrast sharply with the triangular-shaped rose-red patch on its breast. The female looks like an oversized sparrow. This species' melodious song has been described as "like a robin that has taken voice lessons." The Rose-breasted Grosbeak inhabits the mid-to-upperstory levels of deciduous or mixed deciduous-coniferous forests, open second-growth forests, thickets, and suburban areas. These grosbeaks feed on insects

gleaned from foliage, seeds, and fruit depending on the season. They are usually single-brooded and build their nests in small trees, shrubs, and vines. A significant increase in the U.S. population during 1966–1979 was followed by a significant decrease during 1980–2000, according to Breeding Bird Survey data. The clearing of the forests, which creates forest edge and second-growth habitat, and their adaptation to suburban environments have benefited the Rose-breasted Grosbeak population. Habitat availability may be declining as open second-growth forests mature (Burke and Nol 2000; Holmes and Sherry 2001).

**Illinois History**

According to Ridgway (1889), the Rose-breasted Grosbeak was a summer resident in "perhaps more than the northern half" of the state in the late 1800s. Cory (1909) noted that it was a common summer resident in northern Illinois. In the mid-1900s Rose-breasted Grosbeaks were found in central and northern Illinois (Graber and Graber 1963). Breeding occurrences in southern Illinois are fairly recent (Bohlen 1989).

**Breeding Bird Survey Trends**

From 1966 to 2000 the population trend for the Rose-breasted Grosbeak is estimated at 2.9% per year (nonsignificant,  $P = 0.08$ ) for Illinois and 0.3% per year (nonsignificant,  $P = 0.43$ ) for the upper Midwest.

**Credibility Index:** IL = 2 and UM = 2.

**Distribution**

During the atlas project, the Rose-breasted Grosbeak was fairly well distributed and found in priority blocks in 86 counties, primarily in the northern two-thirds of the state. Breeding was Confirmed in 70 counties. The number of records in southern Illinois was unexpected and suggests a range expansion. The lack of records in some of the central and northern counties may be due to the lack of suitable breeding habitat.

**Frequency**

The Rose-breasted Grosbeak was reported from 616 (61.7%) priority blocks and 106 nonpriority blocks. Breeding was Confirmed in 209 (20.9%) of the priority blocks, most frequently by observation of fledged young (88 FL records) and adults feeding young (74 FY records). It is likely that Rose-breasted Grosbeaks nested in most of the blocks in which they were reported.

## Breeding Evidence

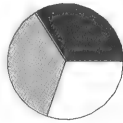
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	209	20.9	33.9	251	19.5
Probable	221	22.1	35.9	255	19.8
Possible	186	18.6	30.2	216	16.8
Totals	616	61.7	100.0	722	56.1

\* 998 priority blocks

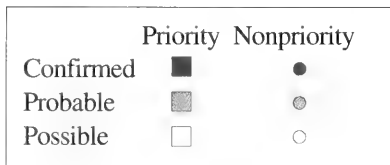
\*\* 1,286 total blocks (priority and nonpriority)



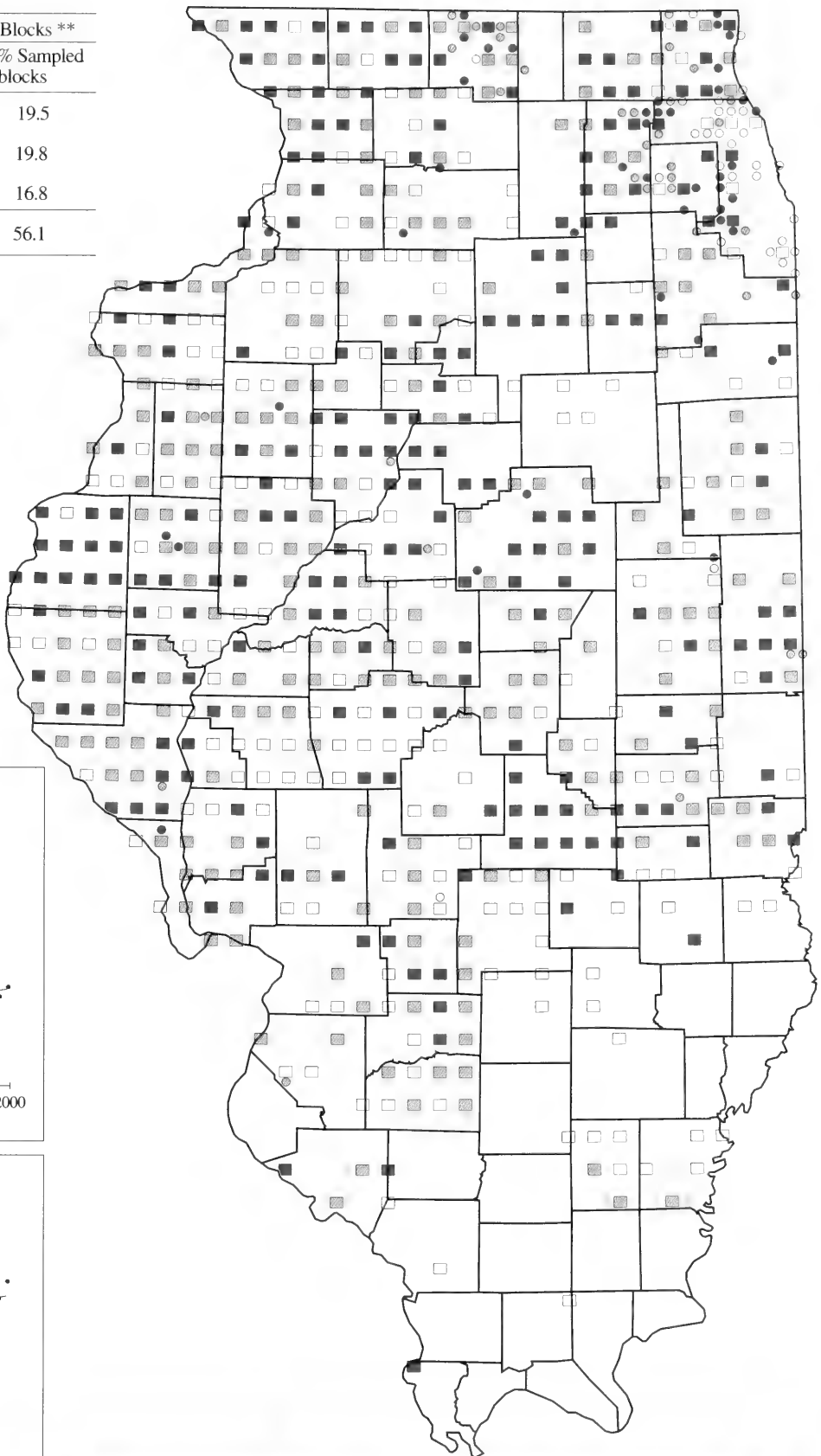
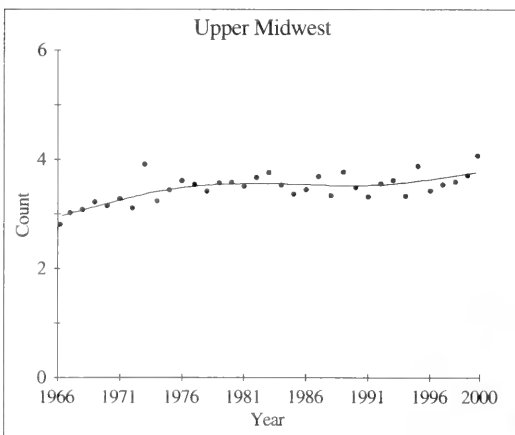
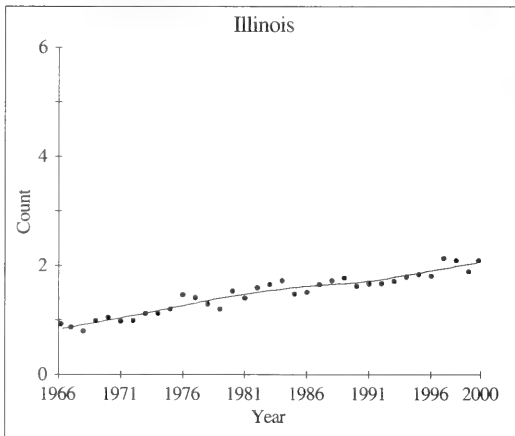
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Rose-breasted Grosbeak**





Richard Day / Daybreak Imagery

**Code:** BLGR

**Rangewide Distribution:** southern half of the U.S., south through Panama

**ILLINOIS**

**Abundance:** uncommon migrant and summer resident in the south, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** brushy areas, overgrown fields, and hedgerows.

**Nest:** a cup of twigs, rootlets, and inner bark strips, lined with finer materials interwoven with leaves, snakeskin, and paper, in a small tree or shrub.

**Eggs:** 4, pale bluish white, unmarked.

**Incubation:** 11–12 days.

**Fledging:** from 9 to 10 days.

The Blue Grosbeak breeds in the southern half of the U.S., parts of the Great Plains, and much of Mexico but is not an abundant species (Ingold 1993). It is found in open or semi-open areas, such as forest edges, abandoned fields, roadside and streamside thickets, hedgerows, and areas with poor or sandy soils, including reclaimed strip-mined lands. The male Blue Grosbeak looks like and inhabits the same habitats as the related Indigo Bunting but is larger, darker blue, and has brown wingbars; the female could be confused with a female Brown-headed Cowbird. The Blue Grosbeak diet consists of insects and other invertebrates, and seeds. Nests are usually

built low in small trees, shrubs, or vines. Blue Grosbeaks are often double-brooded, at least in the southern portion of their range, and are frequent victims of cowbird parasitism (Friedmann 1963; Ingold 1993). The breeding range expanded to the north in the early 1900s, perhaps due to habitat created by the clearing of the forests (Ingold 1993).

**Illinois History**

In the late 1800s and early 1900s the Blue Grosbeak was considered to be rare in Illinois, even in the southern part of the state (Ridgway 1889; Cory 1909). The Blue Grosbeak was not encountered at all during the censuses of 1907–1909 and was rare and erratic during censuses of 1956–1958 (Graber and Graber 1963). An increase in abundance and northward expansion that began in the 1960s continues today. Blue Grosbeaks are more common in Illinois now than they were just thirty years ago but are still rare in northern and many parts of central Illinois (Bohlen 1989).

**Breeding Bird Survey Trends**

The long-term (1966–2000) trend estimates for the Blue Grosbeak populations are 1.7% per year (nonsignificant,  $P = 0.39$ ) and 1.6% per year (nonsignificant,  $P = 0.29$ ) for Illinois and the upper Midwest, respectively.

*Credibility Index:* IL = 2 and UM = 1.

**Distribution**

During the atlas project, the Blue Grosbeak was most frequently reported from priority blocks in the southern third of the state and in the lower Illinois River watershed, with rare occurrences in the rest of the state. It was reported in priority blocks in 52 counties, with breeding Confirmed in 25 of them. Bohlen (1989) states that these grosbeaks are particularly numerous in sandy areas in central Illinois and in areas with poor soil in the southern part of the state.

**Frequency**

The Blue Grosbeak was reported from 150 (15.0%) priority blocks and 8 nonpriority blocks. Breeding was Confirmed in 32 (3.2%) of the priority blocks. Males are easily detected by their distinctive songs and habit of sitting on exposed perches but nests are difficult to locate. Consequently only 21% of the 150 priority block records were Confirmed. It is likely that this species nested in most of the blocks in which it was reported.



## Breeding Evidence

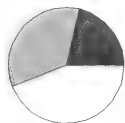
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	32	3.2	21.3	35	2.7
Probable	52	5.2	34.7	55	4.3
Possible	66	6.6	44.0	68	5.3
Totals	150	15.0	100.0	158	12.3

\* 998 priority blocks

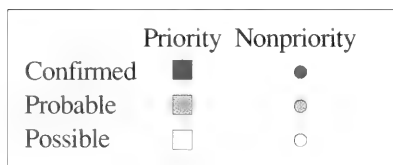
\*\* 1,286 total blocks (priority and nonpriority)



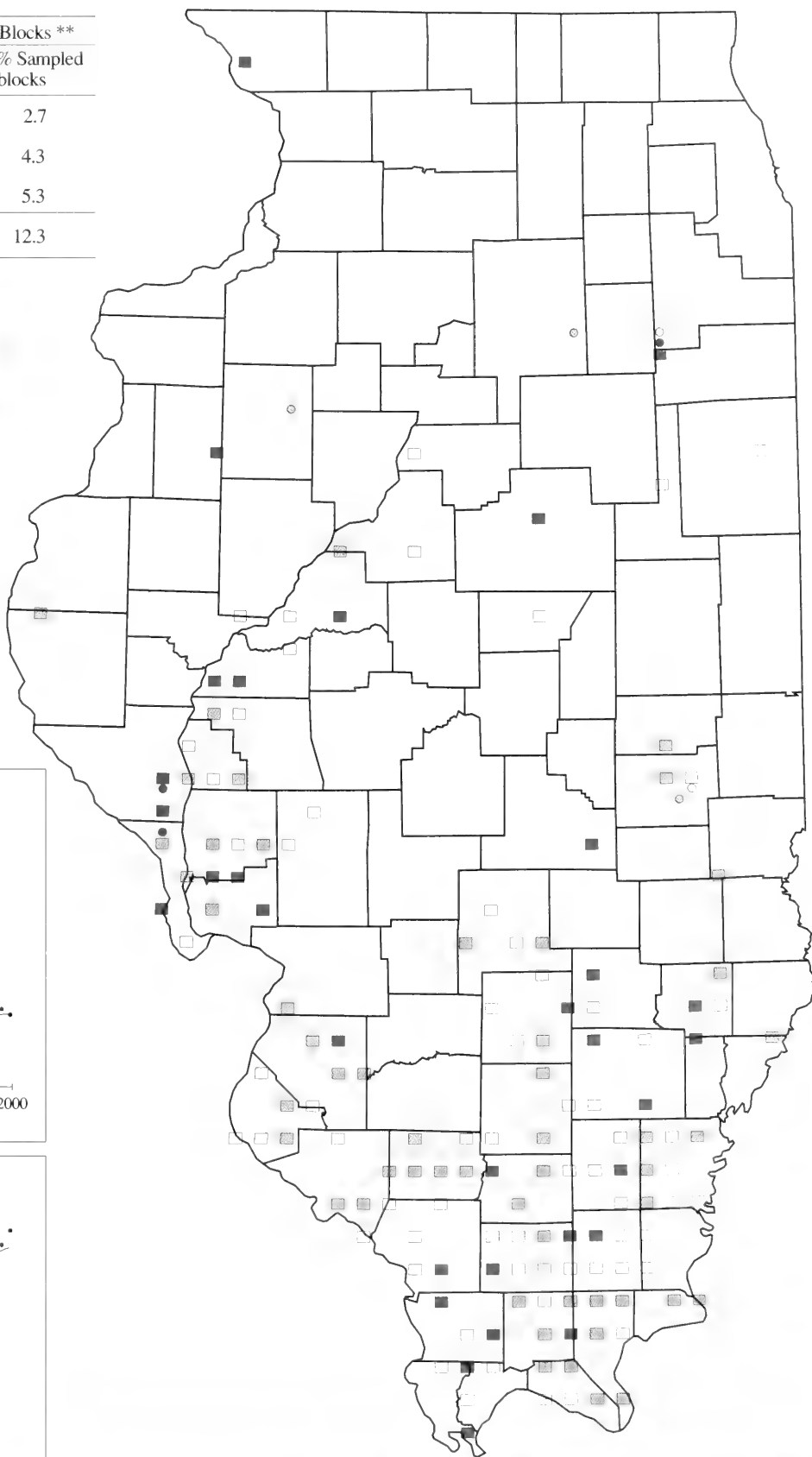
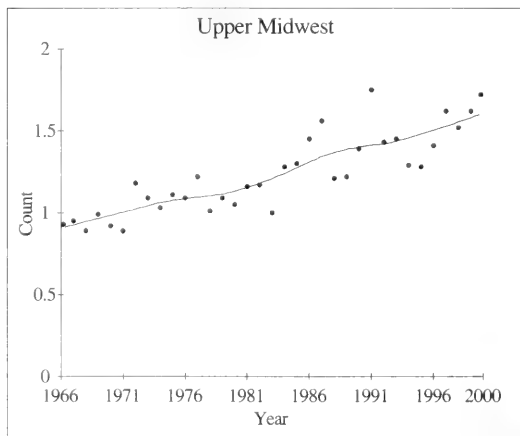
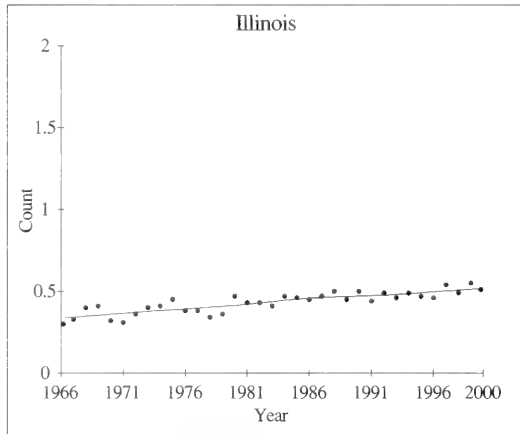
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Blue Grosbeak**



Dennis Oehmke

**Code:** INBU

**Rangewide Distribution:** far southeastern Canada, south through eastern, central, and southwestern U.S. to northwestern South America.

**ILLINOIS**

**Abundance:** abundant migrant and summer resident, decreasing northward; occasional winter resident in south.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open woodlands, second-growth forests, forest edges, weedy fields, and shrublands.

**Nest:** a cup of dried grass, dead leaves, bark strips, moss, and weed stems lined with rootlets, fine grass, feathers, and hair, in a low shrub, forb, or tree sapling.

**Eggs:** 3–4, pure white to pale bluish white, unmarked.

**Incubation:** 12–13 days.

**Fledging:** from 9 to 10 days.

and shrubby habitat by the clearing of the forests was beneficial to this species (Bohlen 1989). On a continental scale Indigo Buntings are abundant and have increased in range and density (Payne 1992). Maturation of old fields to forests, intensive agriculture, frequent roadside mowing, and urbanization are threats to the Indigo Bunting population (Payne 1992).

**Illinois History**

During the late 1800s, the Indigo Bunting was described as “one of our most abundant and most generally distributed summer residents” (Ridgway 1889). Graber and Graber (1963) state that the Indigo Bunting was found statewide in the summer in the 1907–1909 and 1956–1958 censuses and the population was more abundant and had the highest densities in the south. The number of Indigo Buntings in Illinois increased slightly between 1909 and 1957 (Graber and Graber 1963). During the 1957–1958 censuses, they were found in nearly every habitat type, but especially in woody areas; the highest population densities were in edge shrubs (with up to 295 birds per 100 acres), along drainage ditches, and in hedgerows in the south. This species was probably not abundant prior to Euro-American settlement (Graber and Graber 1963).

**Breeding Bird Survey Trends**

Indigo Bunting populations exhibited similar trends in Illinois and the upper Midwest, with positive trends from 1966 to 1979 and significantly ( $P < 0.05$ ) negative trends from 1980 to 2000. From 1966 to 2000 the population declined at an estimated rate of  $-1.0\%$  per year (significant,  $P < 0.01$ ) in Illinois. The long-term (1966–2000) trend estimate for the upper Midwest is  $-0.6\%$  per year (significant,  $P < 0.01$ ).

*Credibility Index: IL = 2 and UM = 2.*

**Distribution**

The Indigo Bunting was a widely distributed species throughout the state. It was found in priority blocks in all 102 counties and Confirmed as breeding in 97. It was one of the most frequently reported species in priority blocks during the atlas project (Table 4).

**Frequency**

The Indigo Bunting was reported from 985 (98.7%) priority blocks and 166 nonpriority blocks. Breeding was Confirmed in 506 (50.7%) of the priority blocks, with the most frequently used breeding evidence criteria being adults feeding young (198 FY records) and fledged young (129 FL records). Indigo Buntings likely nested in all of the blocks in which they were reported and may have occurred in every priority block.

The male Indigo Bunting is more cerulean, turquoise, or ultramarine than indigo in color. It is a small songbird that breeds in the eastern, central, and southwestern U.S. and northern Mexico. This common summer resident inhabits brushy areas, woody edges, early successional habitats, abandoned farmland, and clearings in open woods. Males are conspicuous, often perching on fences and wires along roads to sing their complex and variable songs. Their songs can be heard any time of day from late spring through summer. Most breeding males are monogamous; however, about 15% have two or more mates (simultaneous or serial) and a large proportion of the young may be fathered by males that are not the female’s mate (Payne 1992). Nests are placed in fields or along edges in herbaceous vegetation or in shrubs within 3 feet of the ground and are often parasitized by Brown-headed Cowbirds (Payne 1992). The creation of edge

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	506	50.7	51.4	577	44.9
Probable	417	41.8	42.3	489	38.0
Possible	62	6.2	6.3	85	6.6
Totals	985	98.7	100.0	1,151	89.5

\* 998 priority blocks

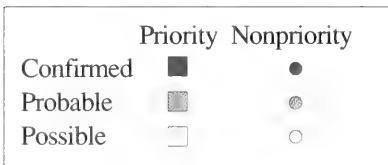
\*\* 1,286 total blocks (priority and nonpriority)



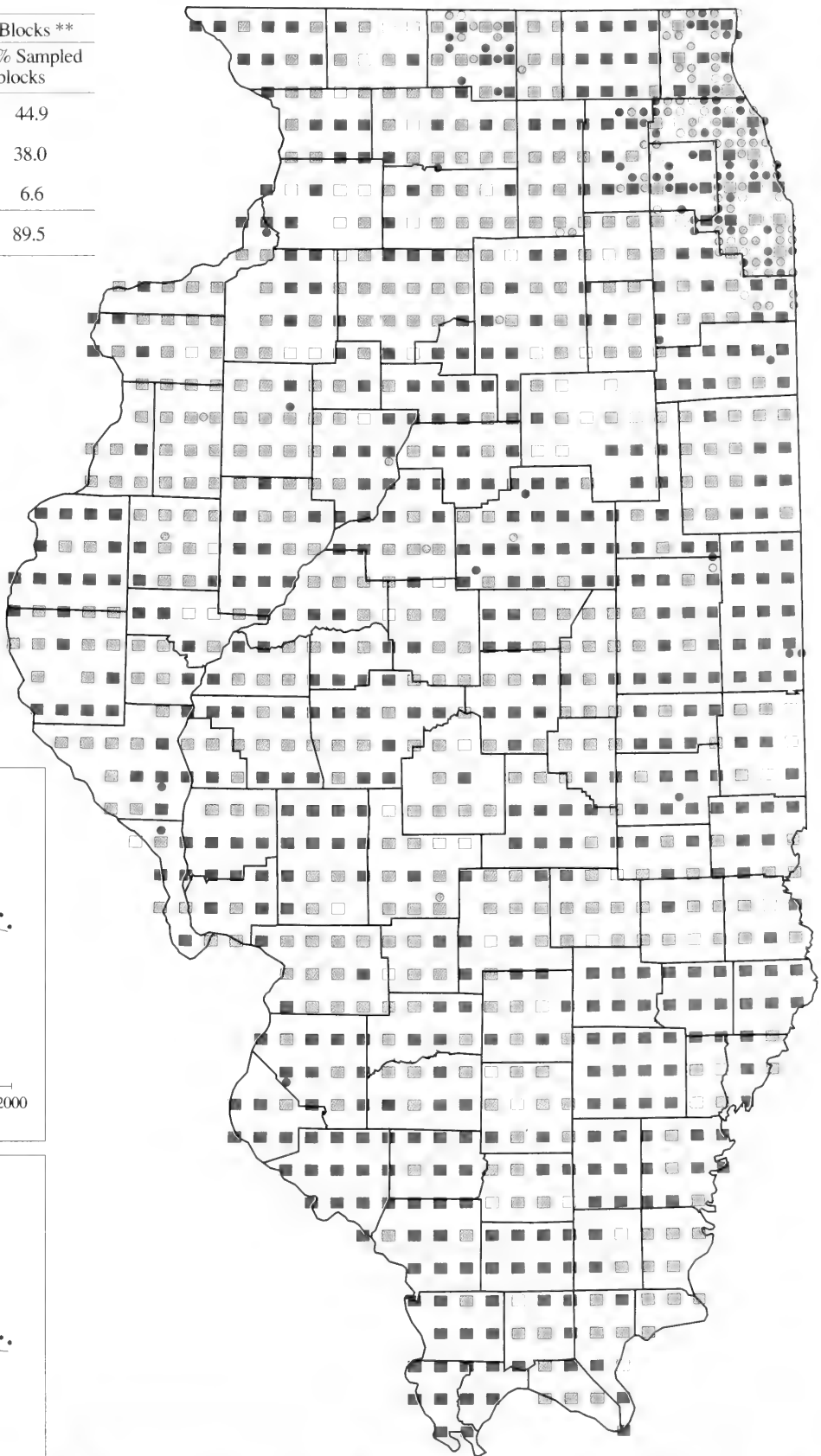
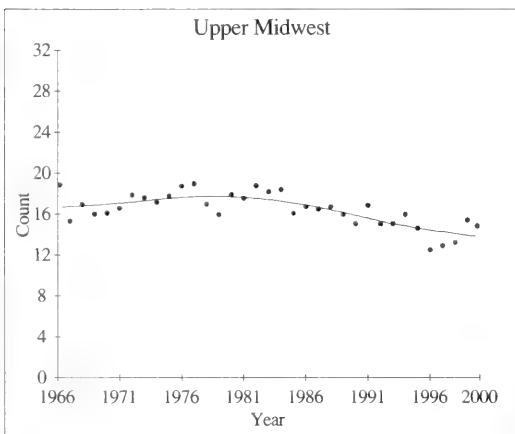
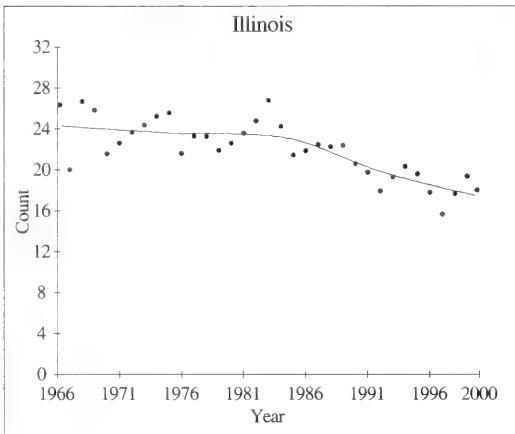
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Indigo Bunting**



Dennis Oehmke

**Code: DICK**

**Rangewide Distribution:** extreme south-central Canada and central and eastern (west of the Atlantic states) U.S. south to northern South America.

**ILLINOIS**

**Abundance:** common migrant and summer resident, decreasing northward; rare winter resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** extensive grasslands, meadows, and abandoned fields, especially those dominated by forbs.

**Nest:** a bulky cup of coarse forbs, grass, or cornstalk lined with fine grass, rootlets and hair interwoven with grass and a few leaves, in low vegetation.

**Eggs:** 4, pale blue, unmarked.

**Incubation:** 12–13 days.

**Fledging:** from 7 to 10 days.

The Dickcissel is a familiar bird in open grasslands with dense cover and moderate to tall vegetation. It breeds primarily in the central U.S. from Ohio to eastern Colorado from Canada to the Gulf of Mexico. In the 1800s its range had expanded into the eastern states, probably in response to the creation of agricultural grasslands by the clearing of the forests, but then contracted as the areas reverted back to forest (Temple 2002). With the extensive loss of native prairie this species adjusted by adapting to fallow fields, fencerows, and early successional fields. The common name is derived from its song “dick, dick, dickcissel” which it delivers from a conspicuous perch. Dickcissel nests are generally placed near the ground in dense grasses and forbs and are frequently parasitized by Brown-headed Cowbirds. Seasonal movements may cause dramatic fluctuations in numbers and shifts in occurrence from year to year (Robbins

et al. 1986; Temple 2002). As with many grassland species, the Dickcissel population is on the decline. The Dickcissel is a species of conservation concern because of the extent of population decline, loss of its grassland habitat, and mass eradication on its Venezuelan wintering grounds where it is considered an agricultural pest. Efforts that restore grasslands, such as the Conservation Reserve Program, which converts row-cropped land to permanent cover, particularly grasses, have recently created new potential nesting habitat (Jackson et al. 1996; Best et al. 1997; Temple 2002).

**Illinois History**

A century ago the Dickcissel was a common summer resident in Illinois (Cory 1909). Graber and Graber (1963) found this species to be one of the most abundant fringillids in the summer throughout the state in the 1907–1909 and 1957–1958 censuses, with the highest densities in the central zone and lowest in the northern zone. The Dickcissel population in Illinois increased substantially between 1909 and 1957 (Graber and Graber 1963) but more recently is on the decline.

**Breeding Bird Survey Trends**

In recent times, Dickcissel populations have significantly declined in both the state and the region, according to BBS data. From 1966 to 2000 the trend estimates are –3.5% per year for Illinois (significant,  $P < 0.01$ ) and –3.4% per year for the upper Midwest (significant,  $P < 0.01$ ). Declines of –10.7% per year (significant,  $P < 0.01$ ) in Illinois and –8.3% per year (significant,  $P < 0.01$ ) in the upper Midwest were reported for the period of 1966 to 1979.

*Credibility Index:* IL = 2 and UM = 2.

**Distribution**

The Dickcissel was widely distributed throughout the state; only Hardin County had no records. It was Confirmed in priority blocks in 83 counties. It was one of the most frequently reported and widely distributed species in priority blocks during the atlas project (Table 4). Gaps in distribution were in highly urbanized (i.e., the northeast), heavily forested (i.e., Pope and Hardin counties), and undersurveyed areas (i.e., Clark, Cumberland, Jasper and Crawford counties).

**Frequency**

The Dickcissel was reported from 899 (90.1%) priority blocks and 61 nonpriority blocks. Breeding was Confirmed in 322 (32.3%) of the priority blocks, mostly by observation of adults feeding young (141 FY records) and fledged young (78 FL records). It is likely that Dickcissels nested in most of the blocks in which they were reported.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	322	32.3	35.8	339	26.4
Probable	449	45.0	49.9	482	37.5
Possible	128	12.8	14.2	139	10.8
Totals	899	90.1	100.0	960	74.7

\* 998 priority blocks

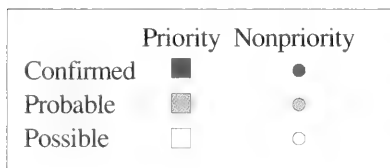
\*\* 1,286 total blocks (priority and nonpriority)



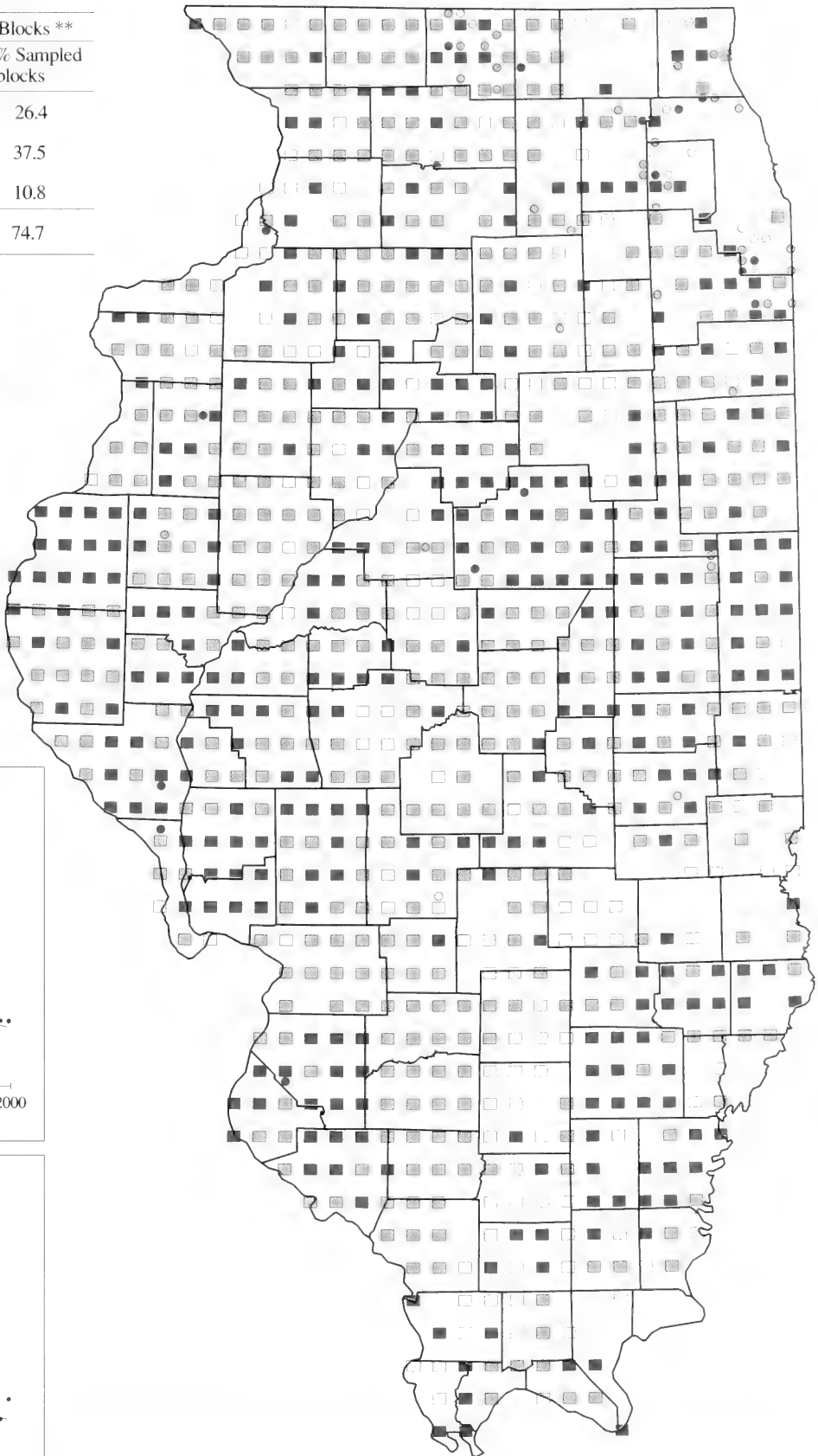
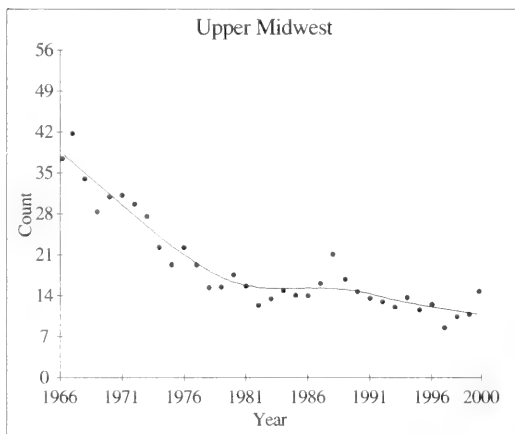
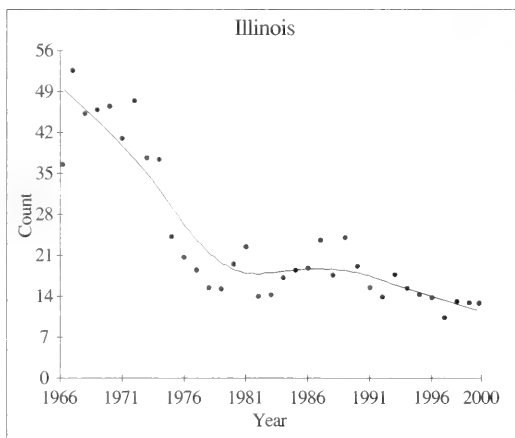
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Dickcissel**



Chicago Academy of Sciences

**Code: BOBO**

**Rangewide Distribution:** southern Canada, south to central South America.

**ILLINOIS**

**Abundance:** common migrant and fairly common summer resident in north, decreasing southward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** prairies, tall grasslands, wet meadows, and cultivated croplands.

**Nest:** a cup of coarse grass and forbs lined with finer grasses, in dense cover on the ground.

**Eggs:** 5–6, gray to pale reddish brown, marked with browns or purples.

**Incubation:** 10–13 days.

**Fledging:** from 10 to 14 days.

The plumage of the breeding male Bobolink is unique among North American songbirds in that it is white above and black below. Originally a prairie grassland species, the Bobolink now inhabits open fields, hayfields, pastures, and wet meadows and may prefer larger fields with a mixture of grasses and broad-leaved forbs (Martin and Gavin 1995; Fitzgerald and Pashley 2000). Males sing a bubbling song from elevated perches or while flying and circling over their territories. Bobolinks are polygynous; a male frequently pairs with multiple females and the female may lay a clutch of eggs sired by more than one male (Martin 1971; Bollinger

and Gavin 1991; Martin and Gavin 1995). Nests are built with grasses and sedges in depressions on the ground where taller vegetation provides shade. Bobolinks breed in southern Canada and the northern half of the U.S. Although populations fluctuate from year to year and place to place, the population has been steadily declining in recent years because of land use changes (e.g., loss of hayfields), changes in the vegetative composition of hayfields, and mowing practices (Martin and Gavin 1995).

**Illinois History**

During the late 1800s, Ridgway (1889) reported that the Bobolink bred only in the northern part of Illinois, where it was an abundant summer resident. Cory (1909) likewise indicated that it was “a common summer resident in northern Illinois.” Graber and Graber (1963) reported a slight increase in the Bobolink population between 1909 and 1957. From the early 1900s to the 1950s most of the Bobolink population was in the northern part of the state but their numbers had increased substantially in central Illinois by the 1950s (Graber and Graber 1963).

**Breeding Bird Survey Trends**

Like most other grassland-dependent species, Bobolink populations are in serious decline. BBS data indicate decreases in the population at –9.3% per year in Illinois (significant,  $P < 0.01$ ) and –2.8% per year in the upper Midwest (significant,  $P < 0.01$ ) for 1966–2000.

*Credibility Index: IL = 1 and UM = 1.*

**Distribution**

During the atlas project, the Bobolink was limited to the northern half of the state, where it was found in 50 and Confirmed as breeding in 27 counties. The record in Edwards County may have been migrants.

**Frequency**

The Bobolink was reported from 234 (23.4%) priority blocks and 73 nonpriority blocks. Breeding was Confirmed in 71 (7.1%) of the priority blocks; adults feeding young and fledged young were the most frequently used breeding evidence criteria for these 71 Confirmed records (25 FY and 20 FL records, respectively). It is likely that Bobolinks nested in most blocks in which they were reported.

## Breeding Evidence

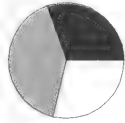
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	71	7.1	30.3	102	7.9
Probable	96	9.6	41.0	130	10.1
Possible	67	6.7	28.6	75	5.8
Totals	234	23.4	100.0	307	23.9

\* 998 priority blocks

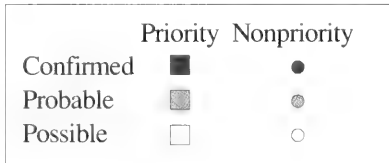
\*\* 1,286 total blocks (priority and nonpriority)



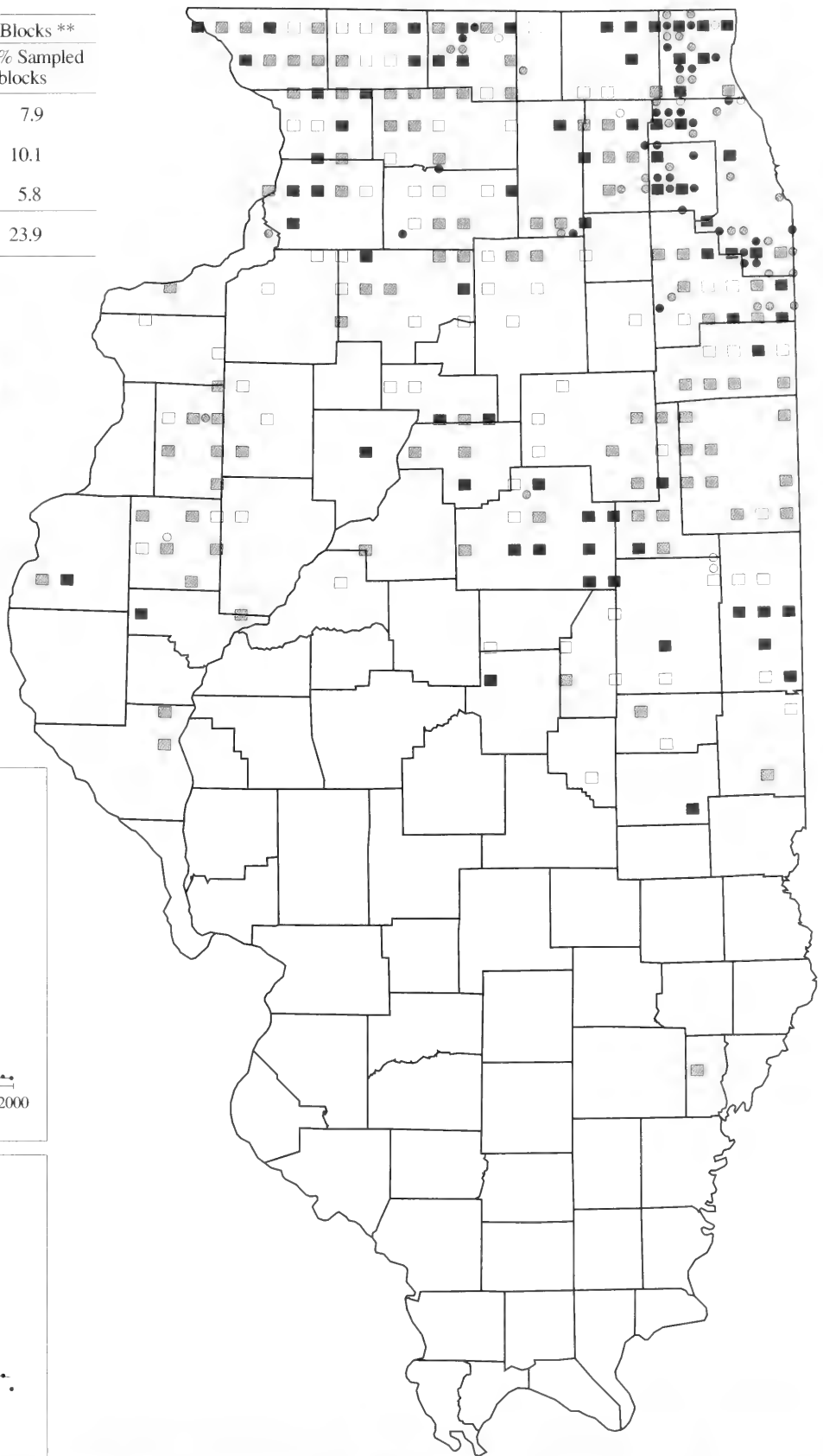
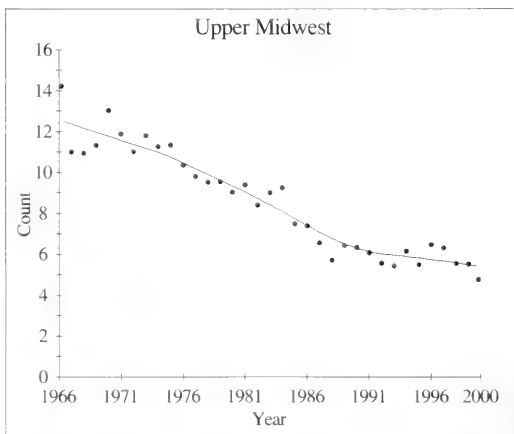
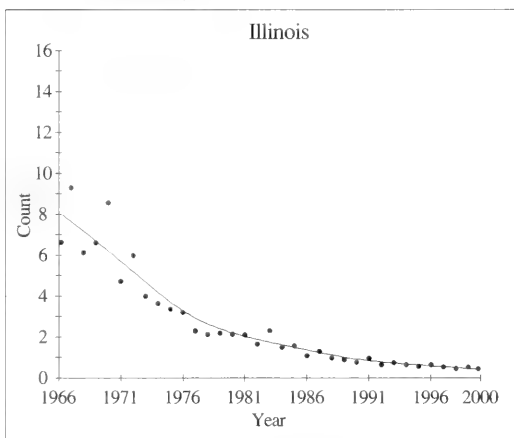
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Bobolink**





Eric Walters

**Code:** RWBL

**Rangewide Distribution:** eastern Alaska and most of Canada, south through all of the U.S. into Central America.

**ILLINOIS**

**Abundance:** abundant migrant and summer resident, abundant winter resident in south, decreasing northward.

**Endangered/Threatened Status:** none

**Breeding Habitat:** marshes, riparian habitats, and fields of all kinds.

**Nest:** a woven cup of sedges and grasses lined with finer grasses, in vegetation, often over water.

**Eggs:** 3–4, pale bluish green, marked with dark colors.

**Incubation:** 10–12 days.

**Fledging:** from 11 to 14 days.

Red-winged Blackbirds are one of the most abundant bird species in North America and their breeding range includes most of the continent except northern Canada and Alaska. They inhabit a variety of wetland and upland habitats, including marshes, wet meadows, roadside ditches, hayfields, fallow and cultivated fields, and suburban areas. The male Red-winged Blackbird is easy to identify with its bright red shoulder patches; the female is smaller and has striped, sparrow-like plumage. The male's "conk, cur-ree" is a familiar sound in the spring. Red-wingeds usually nest in loose colonies and place their nests in emergent vegetation in wetlands, in grasses on the ground, or in trees in uplands. A male may have a harem of up to 15 females nesting in his territory (Yasukawa and Searcy 1995). Females may fledge

24 young in their lifetime (Orians and Beletsky 1989). This species adapted to the drastic decline in marsh habitat in the 1800s and early 1900s by utilizing hayfields, pastures, and grain fields (Yasukawa and Searcy 1995). In some regions large flocks may damage agricultural crops, such as corn, sunflowers, and rice (Bernhardt et al. 1987; Meanley 1971; Mah and Nuechterlein 1991). A variety of population control methods are used in some areas to limit the number of birds.

**Illinois History**

The Red-winged Blackbird, even in the late 1800s and early 1900s, was "one of our most abundant and best known birds" and an abundant summer resident (Ridgway 1889; Cory 1909). It remains abundant today. The Red-winged Blackbird population in Illinois increased dramatically between 1909 and 1958 (Graber and Graber 1963). A century ago much of the population was associated with marshes. As marshland disappeared, the population transitioned to cultivated lands, so that less than 3% of the population was associated with marshes by the late 1950s (Graber and Graber 1963; Bohlen 1989). During 1907–1909 and 1957–1958 the distribution of Red-winged Blackbirds in most habitats was highest in the north (Graber and Graber 1963), but now is evenly distributed throughout the state (Bohlen 1989).

**Breeding Bird Survey Trends**

The trend estimate for the Red-winged Blackbird population in Illinois is  $-0.3\%$  per year (nonsignificant,  $P = 0.62$ ) from 1966 to 2000. In the upper Midwest the trend estimate is  $-1.1\%$  per year (significant,  $P < 0.01$ ) for the same period. *Credibility Index:* IL = 1 and UM = 2.

**Distribution**

If Red-winged Blackbirds had remained dependent on marshes, they would not be a common bird today. However, as a result of its successful adaptation to land use changes, the Red-winged Blackbird is abundant and found in every county. It was Confirmed as breeding in all counties during the atlas project and was the most frequently reported species from priority blocks (Table 4).

**Frequency**

The Red-winged Blackbird was reported from 993 (99.5%) priority blocks and 182 nonpriority blocks. Breeding was Confirmed in 893 (89.5%) of the priority blocks, with fledged young and adults feeding young (277 FL and 256 FY records, respectively) accounting for 60% of these records. The Red-winged was an easy species to see, identify, and confirm and it probably bred in the other blocks in which it was found but not Confirmed.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	893	89.5	89.9	1,039	80.8
Probable	83	8.3	8.4	110	8.6
Possible	17	1.7	1.7	26	2.0
Totals	993	99.5	100.0	1,175	91.4

\* 998 priority blocks

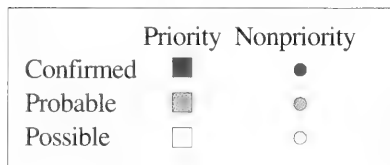
\*\* 1,286 total blocks (priority and nonpriority)



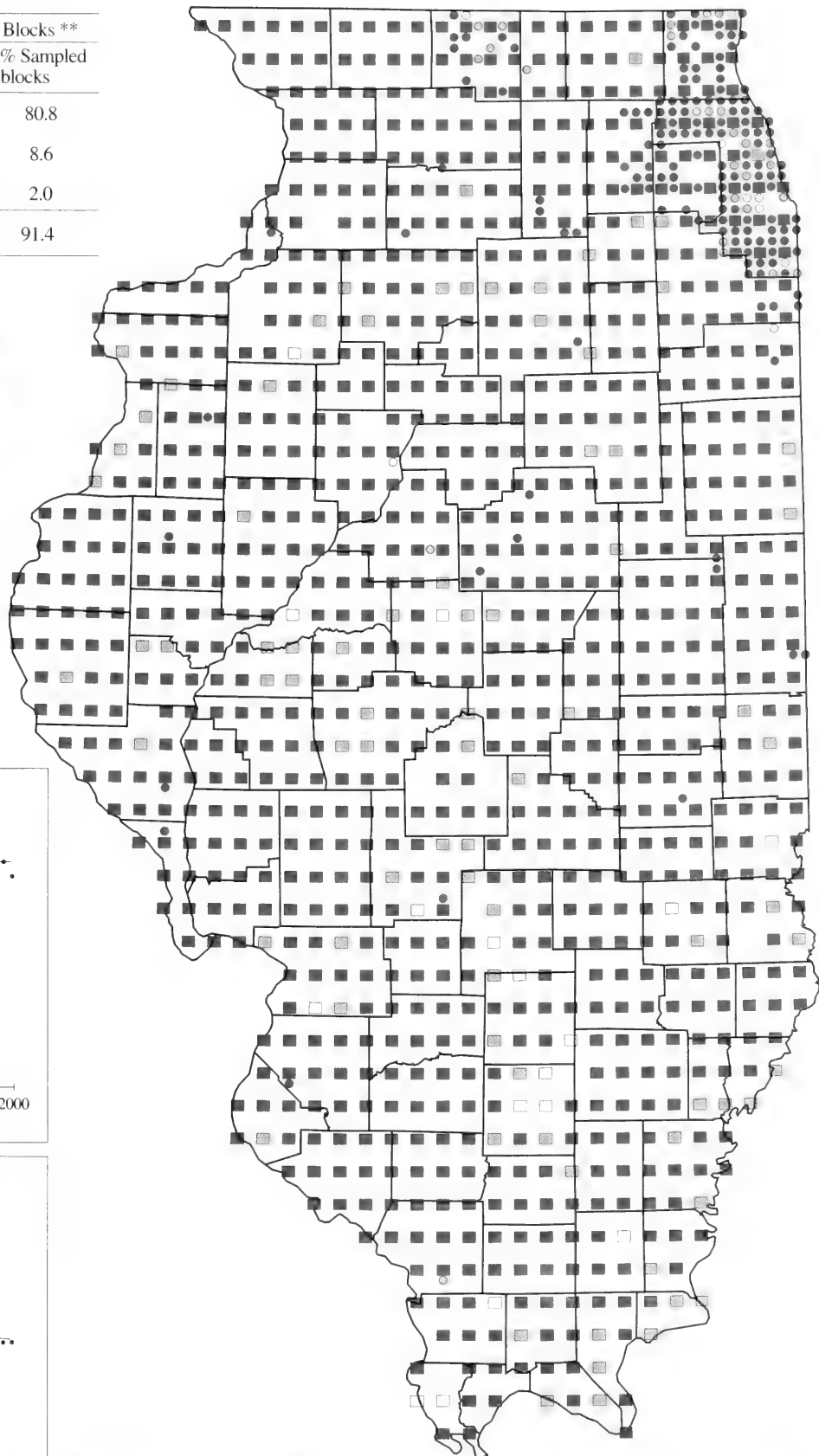
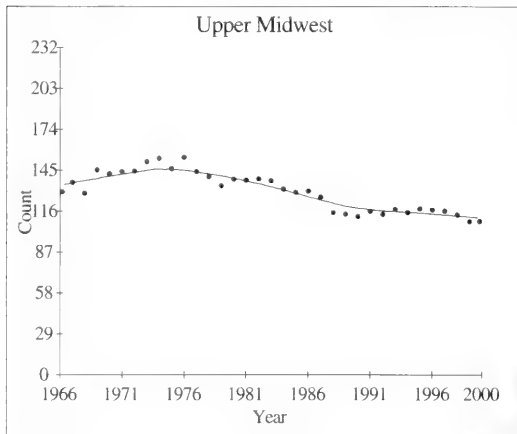
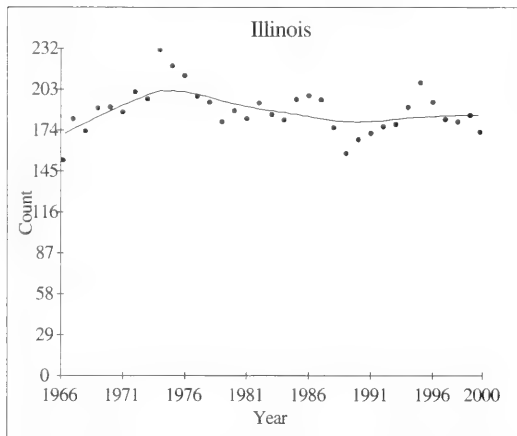
% of 998 sampled priority blocks (gray = no records for this species)



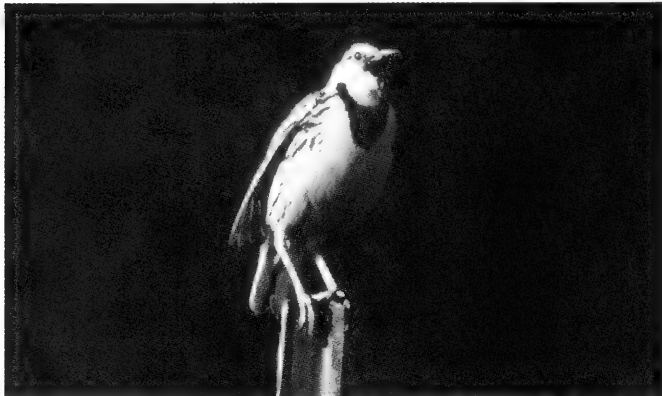
% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Red-winged Blackbird**



Richard Day / Daybreak Imagery

**Code: EAME**

**Rangewide Distribution:** southeastern Canada, eastern and central U.S. south to northern South America.

**ILLINOIS**

**Abundance:** common migrant and summer resident, fairly common winter resident in south, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** grasslands, savannas, prairies, and cultivated fields.

**Nest:** a cup of coarse grass lined with finer grass, on the ground with domed canopy interwoven into surrounding vegetation.

**Eggs:** 3–5, white, marked with browns or purples.

**Incubation:** 13–15 days.

**Fledging:** from 11 to 12 days.

The Eastern Meadowlark is a common and well-known species in rural areas. It breeds from the Great Plains and southwestern regions east to the Atlantic coast and from southern Canada to Central America. Its musical, four-note song can be heard from early spring through summer. Habitats include native prairie, pastures, hayfields, idle or fallow fields, weedy edges of crop fields, and roadsides. Unlike many grassland species, meadowlarks accept smaller grassland tracts for nesting. This species tends to use denser vegetation for nesting and shorter, sparser vegetation for feeding. The well-concealed nest is built on the ground generally in fairly dense vegetation. Eastern Meadowlarks are polygynous, with about half the males of some populations having more than one mate (Lanyon 1995). As with other grassland species the Eastern Meadowlark population

has declined due to land use changes, which have drastically reduced grasslands. A population decline has occurred in North America in the past three decades, according to Breeding Bird Survey data (Lanyon 1995). Hay harvesting and roadside mowing destroy nests (Hays and Farmer 1990). Rates of nesting success in Iowa were estimated to be between 40 and 60% (Jackson et al. 1996).

**Illinois History**

During the late 1800s and early 1900s, the Eastern Meadowlark was a common summer resident throughout Illinois, frequenting open fields and prairies (Cory 1909). Graber and Graber (1963) found a slight decrease in numbers between 1909 and 1957, perhaps due to competition with Red-winged Blackbirds. During that 49-year span, the summer population shifted from being most abundant in southern Illinois in the early 1900s to being evenly distributed statewide in the mid-1900s (Bohlen 1989).

**Breeding Bird Survey Trends**

Trend estimates for the Eastern Meadowlark populations are negative for the period of 1966 to 2000 and for both sub-intervals (1966–1979 and 1980–2000) in Illinois and the upper Midwest. BBS estimates show declines of –2.3% per year in Illinois (significant,  $P = 0.01$ ) and –2.7% per year (significant,  $P < 0.01$ ) in the upper Midwest over the period 1966 to 2000. The sharp drop in Illinois during the mid-1970s may be due to severe winter weather (Graber and Graber 1979).

*Credibility Index: IL = 2 and UM = 2.*

**Distribution**

Atlas data for the Eastern Meadowlark indicate that it was present in all 102 counties and was Confirmed as breeding in 98 of them. Interestingly, breeding was Confirmed even in the well-populated counties of Cook and DuPage, except where urbanization was heaviest. It was one of the most frequently reported and widespread species in priority blocks during the atlas project (Table 4).

**Frequency**

The Eastern Meadowlark was reported from 971 (97.3%) priority blocks and 122 nonpriority blocks. Breeding was Confirmed in 558 (55.9%) of the priority blocks, mostly by observation of fledged young (237 FL records) and adults feeding young (207 FY records). While Eastern and Western Meadowlarks can be readily identified by their song and call notes, it is possible, at least in northern Illinois where the two species coexist, that they may not have been correctly identified when based on sight identification alone.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	558	55.9	57.5	620	48.2
Probable	288	28.9	29.7	328	25.5
Possible	125	12.5	12.9	145	11.3
Totals	971	97.3	100.0	1,093	85.0

\* 998 priority blocks

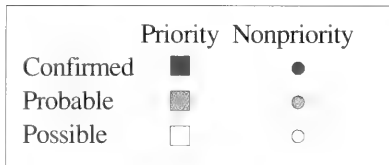
\*\* 1,286 total blocks (priority and nonpriority)



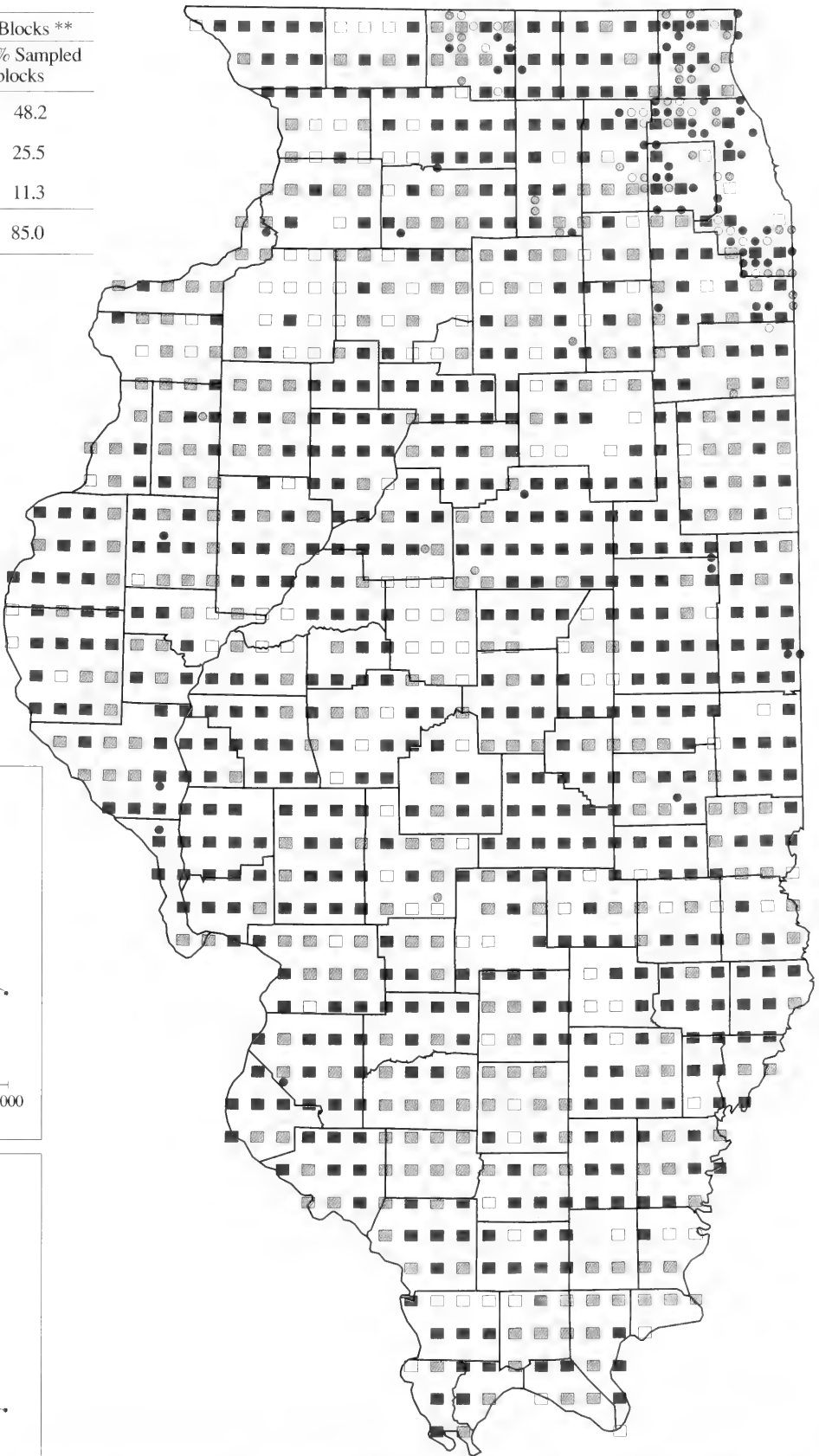
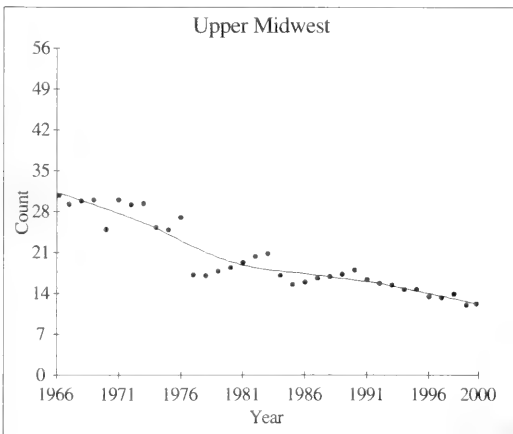
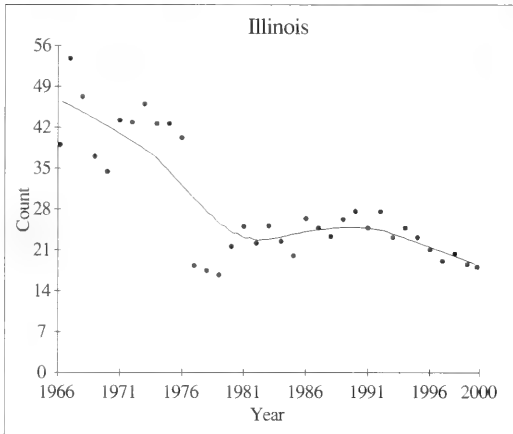
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Eastern Meadowlark**



James Landing

**Code:** WEMF

**Rangewide Distribution:** southwestern and south-central Canada, south through central and western U.S. to northern Mexico

**ILLINOIS**

**Abundance:** fairly common migrant and summer resident, uncommon winter resident, decreasing southward and eastward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** grasslands, savannas, prairies, and cultivated fields.

**Nest:** a cup of coarse grass lined with finer grass, on the ground with domed canopy interwoven into the surrounding vegetation.

**Eggs:** 5, white, marked with browns or purples.

**Incubation:** 13–15 days.

**Fledging:** about 12 days.

the northeast in the 1900s but in recent decades populations have declined slightly in the U.S. and Canada (Lanyon 1994).

**Illinois History**

In the 1800s the Western Meadowlark was probably a common summer resident on the prairies in western Illinois (Nelson 1876). In the early 1900s it was deemed by Cory (1909) to be of “rather rare occurrence” in Illinois. Because of the similarity of the two meadowlark species, Graber and Graber (1963) did not make a distinction between their populations and provided a combined meadowlark account; they reported a decrease in numbers and a northward shift in the meadowlark populations between 1909 and 1957. As the Western Meadowlarks range expanded eastward from the central U.S., they have become more abundant in western and central Illinois but are still less abundant than Eastern Meadowlarks in most areas (Bohlen 1989).

**Breeding Bird Survey Trends**

For 1966–2000 the trend for the Illinois population of Western Meadowlarks is estimated at  $-2.3\%$  per year (nonsignificant,  $P = 0.59$ ); the decline for the 1966–1979 subinterval is a significant ( $P < 0.01$ )  $-14.4\%$  per year. The upper Midwest population declined significantly over the period from 1966 to 2000 as well as both subintervals (1966–1979 and 1980–2000), with the long-term trend estimated at  $-4.2\%$  per year (significant,  $P < 0.01$ ).

*Credibility Index:* IL = 2 and UM = 2.

**Distribution**

During the atlas project, the Western Meadowlark was found in priority blocks in 48 counties and was limited to the northern half of the state. It occurred most frequently in blocks to the north and west of the Illinois River with decreasing frequency in a southeasterly direction. Records were reported as far south as Pike County on the west and Vermilion County on the east. Breeding was Confirmed in 27 counties.

**Frequency**

The Western Meadowlark was reported from 213 (21.3%) priority blocks and 23 nonpriority blocks. Breeding was Confirmed in 58 (5.8%) of the priority blocks, primarily by observation of adults feeding young or fledged young (28 FY and 25 FL records, respectively). It is likely that Western Meadowlarks bred in many of the blocks in which they were reported. Because of the similarities between Eastern and Western meadowlarks, some records for this species may be incorrect if based on sight identification alone.

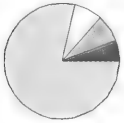
The Western Meadowlark is abundant and widespread, with a breeding range that includes the central and western U.S., southwestern Canada, and northern Mexico. It inhabits open country, such as native grasslands, pastures, hayfields, roadsides, and weedy edges of cropland. Except for its songs, call notes, and subtle differences in the facial plumage, the Western Meadowlark is nearly indistinguishable from the Eastern Meadowlark. The Western’s song is a warble of flute-like notes; its call is “chuck.” The Western is more often associated with drier and sandier habitats than the Eastern Meadowlark in areas where they co-occur. The Western Meadowlark feeds mainly on the ground and nests in fairly dense vegetation on the ground. With the clearing of the forests for agriculture, the breeding range expanded to

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	58	5.8	27.2	62	4.8
Probable	77	7.7	36.2	87	6.8
Possible	78	7.8	36.6	87	6.8
Totals	213	21.3	100.0	236	18.4

\* 998 priority blocks

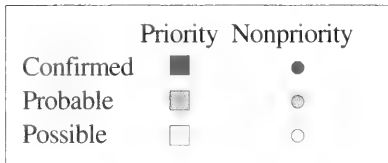
\*\* 1,286 total blocks (priority and nonpriority)



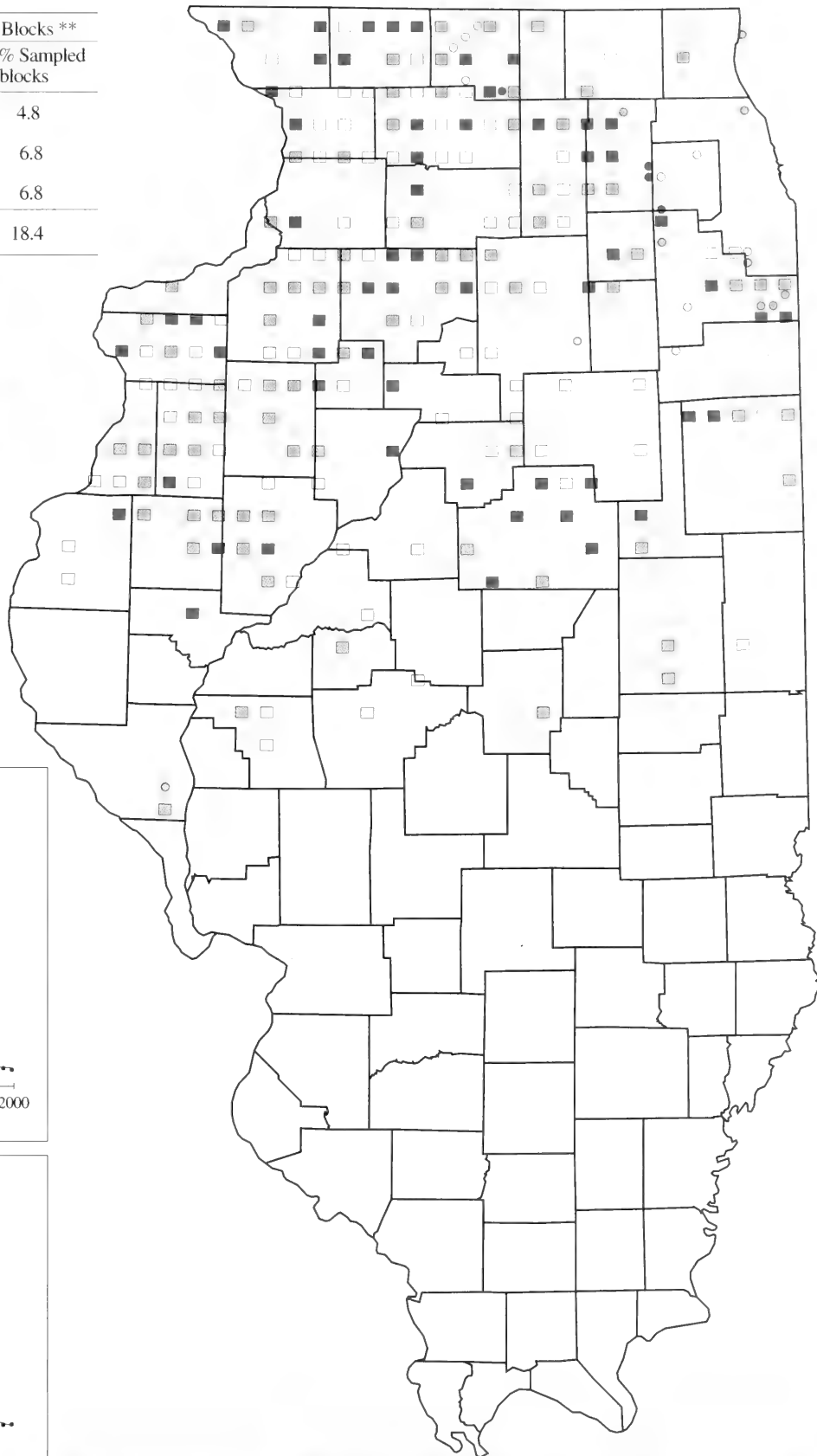
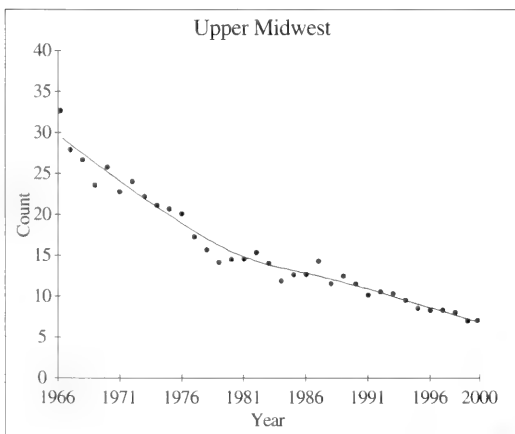
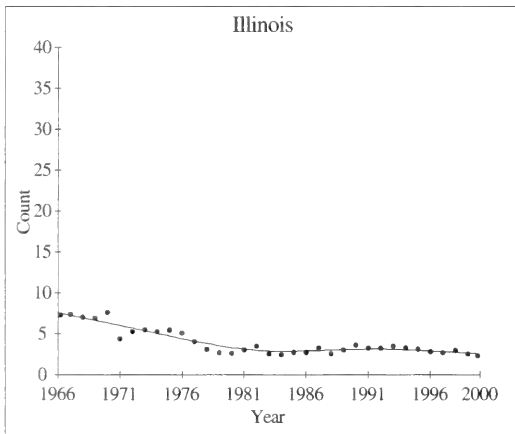
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Western Meadowlark**





Joe Milosevich

**Code:** YHBL

**Rangewide Distribution:** southwestern Canada through the central and western U.S. to central Mexico.

**ILLINOIS**

**Abundance:** rare migrant throughout the state and rare summer resident in north.

**Endangered/Threatened Status:** endangered.

**Breeding Habitat:** marshes with permanent water and emergent vegetation.

**Nest:** a bulky and firmly woven cup of wet vegetation lined with dried grass, over water in emergent vegetation.

**Eggs:** 4, grayish white to pale greenish white, marked with browns or grays.

**Incubation:** 11–13 days.

**Fledging:** from 9 to 12 days.

The descriptively named Yellow-headed Blackbird breeds primarily in the prairie wetlands of the north-central and western U.S. and southwestern Canada. This blackbird nests in deepwater marshes with moderately dense stands of emergent vegetation, especially cattails, bulrushes, and reeds, interspersed with open water (Weller and Spatcher 1965; Heidorn et al. 1991; Twedt and Crawford 1995). Yellow-headed Blackbirds are colonial nesters and, like other blackbird species, are polygamous, with up to six females in a harem (Orians 1980). Females are single-brooded. Colonies are known to frequently move to different wetlands

between years and their size may vary in response to changes in vegetative structure and water depth.

**Illinois History**

In the late 1800s the Yellow-headed Blackbird was reportedly “confined to the prairie districts of the northern portion of the State” (Ridgway 1889). Cory (1909) reported it as a summer resident in northern Illinois “breeding in open swampy places” and local in distribution, being common in some localities and rare or absent in others with similar habitat conditions. This species has apparently been in Illinois for some time, although it is primarily a western species (Bohlen 1989). Today it is a rare and localized breeding species that occurs mostly in the wetlands of the northeastern part of the state. Because of its limited distribution and the loss and degradation of wetland habitats, the Yellow-headed Blackbird is listed as an endangered species in Illinois.

**Breeding Bird Survey Trends**

Like other wetland specialists, the Yellow-headed Blackbird population is not adequately sampled by the BBS. Because of its small population and localized distribution, the BBS does not estimate a trend for this species in Illinois. In the upper Midwest the trend estimate for 1966–2000 indicates a decline in population of –3.7% per year (significant,  $P < 0.01$ ) *Credibility Index:* IL = none and UM = 2.

**Distribution**

The Yellow-headed Blackbird occurred primarily in the northern counties. It was Confirmed as breeding in 7 of the 11 counties in which it was found in priority blocks. Yellow-heads occasionally occur at isolated and temporary locations much farther south, such as the record in Jersey County during the atlas project and in Madison, Cass, and Mason counties prior to the atlas project.

**Frequency**

The Yellow-headed Blackbird was reported from 15 (1.5%) priority blocks and 33 nonpriority blocks. Breeding was Confirmed in 9 (0.9%) of the priority blocks, with the most frequently used breeding evidence criteria being adults feeding young (4 FY records) and fledged young (3 FL records). If the birds were found in suitable habitat, nesting likely occurred in the 6 priority blocks with Probable and Possible records.

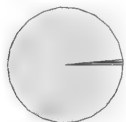


## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	9	0.9	60.0	24	1.9
Probable	1	0.1	6.7	13	1.0
Possible	5	0.5	33.3	11	0.9
Totals	15	1.5	100.0	48	3.7

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

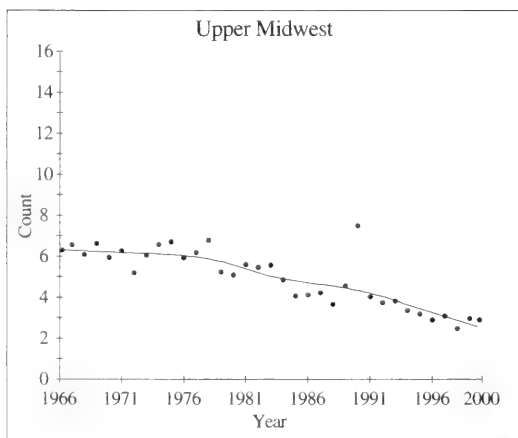


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	▒	◐
Possible	□	○



## Breeding Bird Survey Trends



**Yellow-headed Blackbird**



Eric Walters

**Code: BRBL**

**Rangewide Distribution:** southwestern and south-central Canada, south through the central and western U.S. into central Mexico.

**ILLINOIS**

**Abundance:** uncommon migrant, rare and local summer resident in northeast, occasional winter resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** shrubby or brushy areas (especially near water), cultivated areas, and around human habitations.

**Nest:** a sturdy cup of twigs, grass, and mud lined with finer materials, on the ground or in small to large trees.

**Eggs:** 4–6, grayish, marked with browns.

**Incubation:** 12–14 days.

**Fledging:** from 13 to 14 days.

Brewer's Blackbirds are found in open habitats in rural and suburban areas and primarily breed in southwestern Canada and the north-central and western U.S. They are found in a wide variety of habitats, including weedy margins of marshes and streams, forest clearcuts, grassy uplands, residential areas, and farmsteads. During the early 1900s, their range began to expand eastward from Minnesota and now extends to Michigan and Ontario. Brewer's Blackbirds exploited the habitat created by the conversion of forest to agricultural land in these areas (Martin 2002). This colonial nesting species places its nest on the ground, in shrubs or trees, or in emergent vegetation, usually near water. Unlike other blackbirds, the Brewer's appears to be monogamous

(Martin 2002). Because it is well adapted to human modified environments (i.e., forest clearings, urbanized areas, right-of-ways), the Brewer's Blackbird population has undoubtedly increased in abundance and range since Euro-American settlement (Martin 2002).

**Illinois History**

In the late 1800s and early 1900s the Brewer's Blackbird was not known to regularly occur in Illinois and was considered a straggler even as a migrant (Ridgway 1889; Cory 1909). Ford (1956) indicated that the population was expanding eastward and by the 1950s he considered it an uncommon summer resident in the Chicago region. The first reported nests in Illinois occurred in Lake and Cook counties in 1930 (Ford 1930; Lyon 1930). A small colony was apparently active near Dolton in Cook County between 1947 and 1954, as 78 young were banded during that 8-year span (Smith and Parmelee 1955). Currently the Brewer's Blackbird is a regular spring and fall migrant through Illinois, but has not expanded its breeding range in the state beyond the initial counties and is presently limited to Lake County. Because of its small numbers and limited distribution in the state, the Brewer's Blackbird was listed as a threatened species in Illinois but was delisted in 1994 because Illinois is at the edge of its breeding range and this species was not considered to be in jeopardy in its primary breeding range.

**Breeding Bird Survey Trends**

The small and localized population of Brewer's Blackbird is not adequately sampled by the BBS in Illinois. The trend estimate for 1966–2000 for the upper Midwest is 1.9% per year (nonsignificant,  $P = 0.07$ ).

*Credibility Index:* IL = none and UM = 1.

**Distribution**

Illinois is at the southeastern edge of the Brewer's Blackbird breeding range. The only known Illinois breeding sites, documented for several years prior to the atlas project, are limited to a small area along Lake Michigan just south of the Wisconsin line (primarily Illinois Beach State Park) and a few other Lake County locations. During the atlas project this species was documented at a single, nonpriority block in Lake County.

**Frequency**

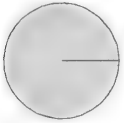
The Brewer's Blackbird was found in only one block, a nonpriority block in northeastern Lake County where it was Confirmed as breeding.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	0	0.0	0.0	1	0.1
Probable	0	0.0	0.0	0	0.0
Possible	0	0.0	0.0	0	0.0
Totals	0	0.0	100.0	1	0.1

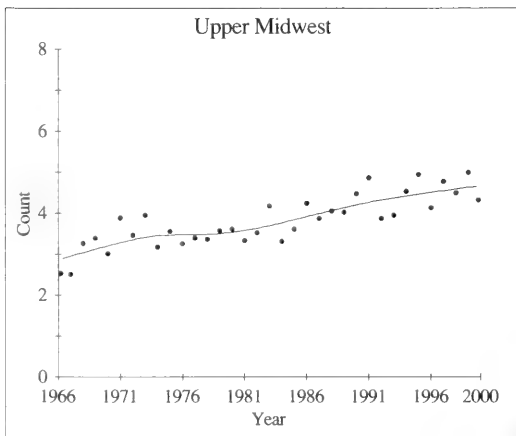
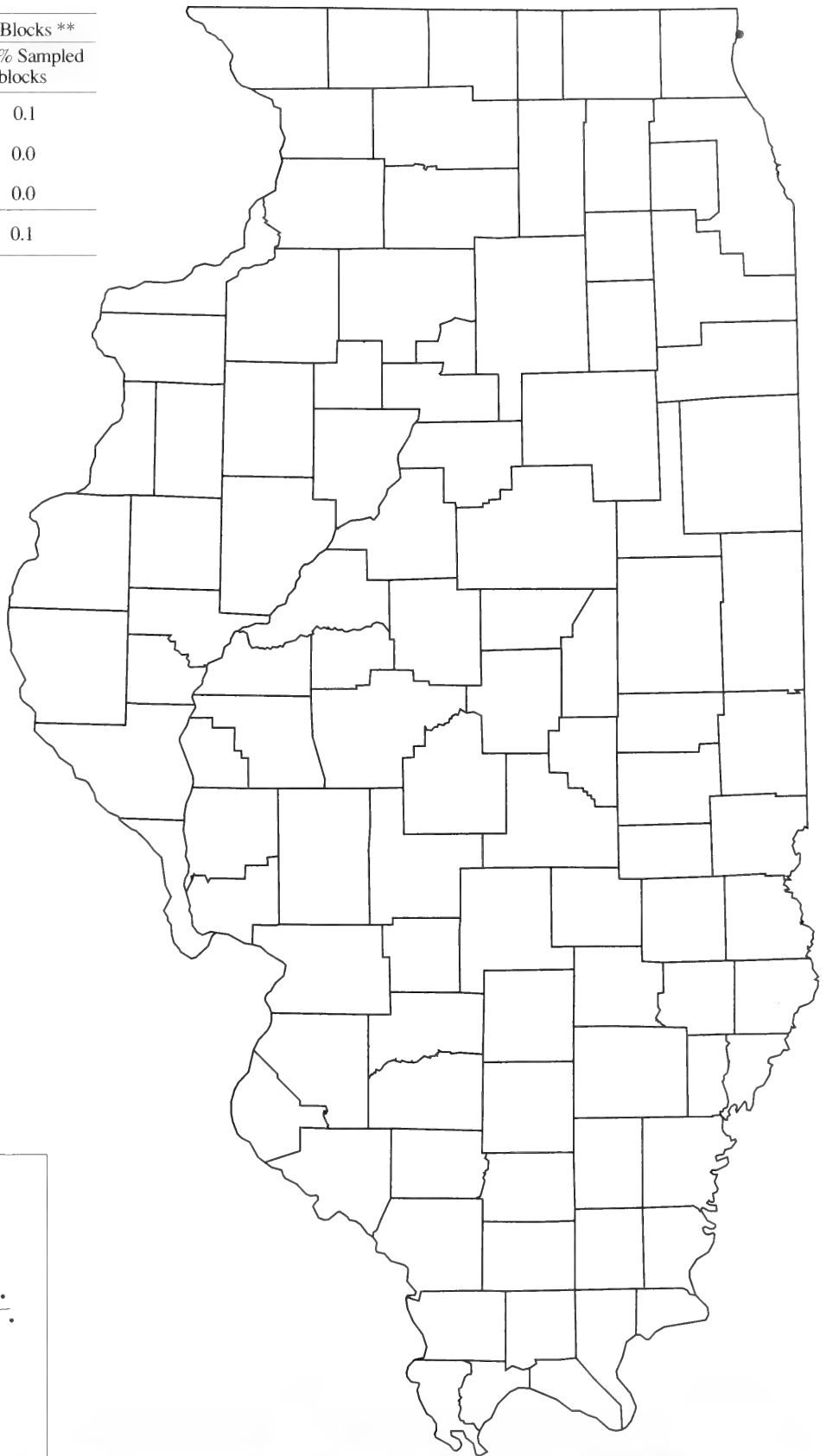
\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority  
blocks (gray = no records  
for this species)

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Brewer's Blackbird**



Robert Randall

**Code:** COGR

**Rangewide Distribution:** southern Canada and the central and eastern U.S.

**ILLINOIS**

**Abundance:** abundant spring migrant and summer resident, common to abundant winter resident in south, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** partially open areas with scattered trees, open woodlots, human habitations, pines, and near wetlands.

**Nest:** a bulky cup of grass, forbs, twigs, rushes, sedges, and mud lined with finer materials, in shrubs and trees.

**Eggs:** 4–5, greenish white to light brown, marked with dark brown or purple.

**Incubation:** 13–14 days.

**Fledging:** from 16 to 20 days.

The Common Grackle is one of the most common, conspicuous, and widely distributed breeding birds in eastern and central North America. Although presumed to be not as common as the Passenger Pigeon, its migratory flocks are often compared to those of that extinct species. The Common Grackle, a native species that is very successful in human-altered habitats, is common in open areas with scattered trees, such as residential areas, open forests, forest edges, hedgerows, and marshes. The clearing of the forests for agricultural purposes created new habitat for this species. The population greatly increased and its breeding range expanded westward during the 1900s. This gregarious and

omnipresent bird is considered by many to be a nuisance. Grackles nest in small colonies in trees, often near human habitations. They are primarily monogamous (Wiley 1996) and females generally produce a single brood per year. Grackles are considered significant agricultural pests that annually cause millions of dollars of damage to crops. Because roost sites may harbor the fungus that causes histoplasmosis, a potentially hazardous respiratory disease, large numbers of roosting blackbirds and European Starlings are killed (Mott 1984). These control measures have been suggested as causing population declines in the East (Bystrak and Robbins 1977).

**Illinois History**

The Common Grackle has been considered a common to abundant summer resident throughout the state since the late 1800s (Ridgway 1889; Cory 1909; Smith and Parmalee 1955; Graber and Graber 1963; Bohlen 1989). Summer population densities were higher in the northern half of the state in both the 1907–1909 and 1957–1958 censuses (Graber and Graber 1963). Graber and Graber (1963) estimated that the grackle population declined slightly between 1909 and 1957. According to Breeding Bird Survey data, Illinois has one of the highest relative abundance levels for Common Grackles in the U.S.

**Breeding Bird Survey Trends**

Sample size and relative abundance are high for the Common Grackle in both the state and region. For Illinois, the trend estimate is  $-0.4\%$  per year (nonsignificant,  $P = 0.54$ ) from 1966 to 2000. For the upper Midwest, the data indicate a decline of  $-1.1\%$  per year (significant,  $P < 0.01$ ) for the same period.

*Credibility Index:*  $IL = 1$  and  $UM = 1$ .

**Distribution**

Common Grackles were reported from every county and breeding was Confirmed in all but Hardin County. It was one of the most frequently reported and widespread species in priority blocks during the atlas project (Table 4) and most likely occurred as a breeding species in all priority blocks.

**Frequency**

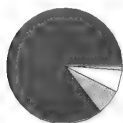
The Common Grackle was reported from 986 (98.8%) priority blocks and 183 nonpriority blocks. This species was easy to observe and confirm as breeding. Breeding was Confirmed in 854 (85.6%) of the priority blocks, of which 81% were fledged young (351 FL records) and adults feeding young (344 FY records).

## Breeding Evidence

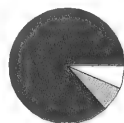
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	854	85.6	86.6	1,006	78.2
Probable	71	7.1	7.2	88	6.8
Possible	61	6.1	6.2	75	5.8
Totals	986	98.8	100.0	1,169	90.9

\* 998 priority blocks

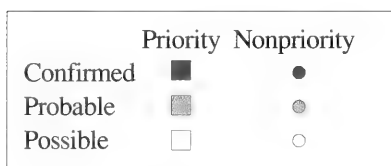
\*\* 1,286 total blocks (priority and nonpriority)



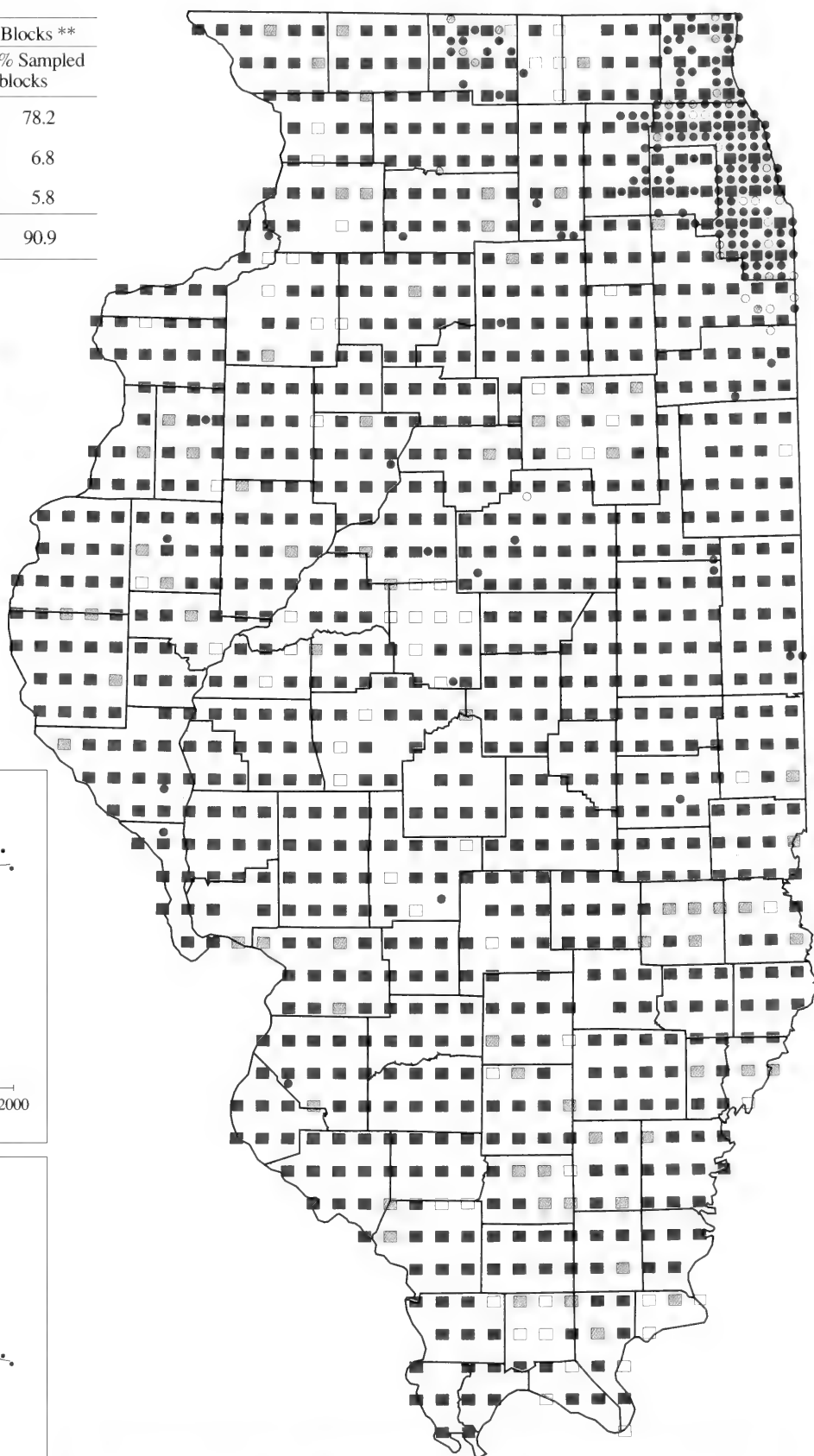
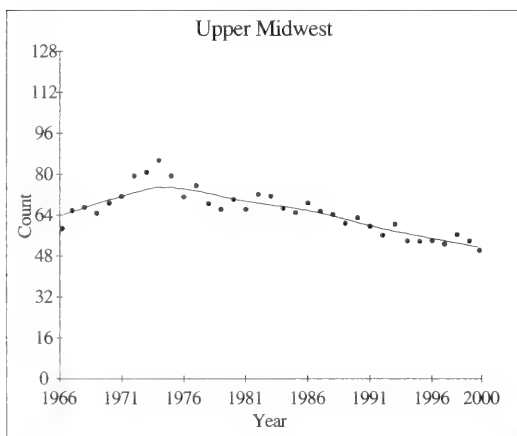
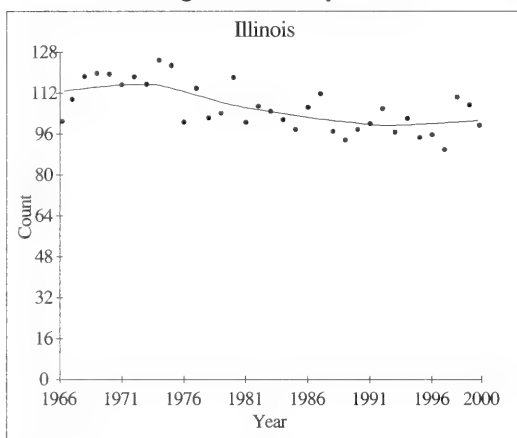
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Common Grackle**



Robert Randall

**Code:** BHCO

**Rangewide Distribution:** southern Canada, south through all of the U.S. to central Mexico.

**ILLINOIS**

**Abundance:** common migrant and summer resident, fairly common winter resident in south, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** woodlands, forest edges, shrubby areas, and grasslands.

**Nest:** does not build a nest of its own; lays its eggs in other species' nests.

**Eggs:** indeterminate number (captive females can lay more than 70 eggs in a season), white with brown/gray spots.

**Incubation:** 10–12 days.

**Fledging:** from 10 to 11 days.

areas of potential breeding habitat (Lowther 1993). The female is known to lay eggs in the nests of 220 species and 144 of these are known to have successfully reared cowbird young (Friedmann 1963). Females are adept at finding other birds' nests and prolific in laying eggs, up to 40 in a season in the wild (Jackson and Roby 1992; Lowther 1993).

Cowbirds are a conservation concern because they pose a threat to the reproductive success of their host species, and are of special concern for host species with small populations.

**Illinois History**

According to all accounts, the Brown-headed Cowbird has been a common summer resident throughout the state since at least the late 1800s (Ridgway 1889; Cory 1909; Smith and Parmalee 1955; Graber and Graber 1963; Bohlen 1989).

Although the population fluctuates from year to year, Graber and Graber (1963) reported an overall decline in the Illinois population between 1909 and 1957, probably in response to the loss of pastures. Scott Robinson (pers. comm.) noted that cowbird parasitism rates in Illinois are among the highest in the U.S. and Bohlen (1989) lists 61 species in Illinois that are known to be parasitized by Brown-headed Cowbirds.

**Breeding Bird Survey Trends**

Brown-headed Cowbird populations in Illinois increased at a rate of 1.1% per year (significant,  $P = 0.05$ ) from 1966 to 2000. In the upper Midwest, BBS data indicate a decline of  $-0.6\%$  per year (significant,  $P = 0.02$ ) over the same period. *Credibility Index:* IL = 1 and UM = 1.

**Distribution**

Atlas data indicate that the Brown-headed Cowbird is widely distributed throughout Illinois, occurring in all counties and undoubtedly breeding in every county as well. It was one of the most frequently reported and widely distributed species in priority blocks during the atlas project (Table 4).

**Frequency**

The Brown-headed Cowbird was reported from 951 (95.3%) priority blocks and 169 nonpriority blocks. Breeding was Confirmed in 424 (42.5%) of the priority blocks. Cowbirds were easy to detect throughout the atlas project. The breeding evidence for nearly three-fourths of the Confirmed records in priority blocks was fledged young (310 FL records). Since cowbirds often feed a considerable distance from their nesting territories (Robinson et al. 1993), some Probable and Possible records may have been birds passing through the priority blocks.

The Brown-headed Cowbird is a common, conspicuous, and easily recognized species that breeds throughout the U.S., southern and western Canada, and northern Mexico. Prior to Euro-American settlement, this species was limited to the central Great Plains, but the population expanded as agriculture and urbanization opened the forests (Lowther 1993). It inhabits grassland areas with scattered trees, such as forest edges, fields, pastures, and residential areas. Brown-headed Cowbirds are brood parasites and totally dependent on other birds to incubate their eggs and raise their young. They preferentially parasitize nests at the boundaries between woods and fields; forest fragmentation has created large

## Breeding Evidence

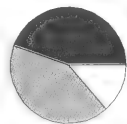
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	424	42.5	44.6	520	40.4
Probable	398	39.9	41.9	443	34.4
Possible	129	12.9	13.6	157	12.2
Totals	951	95.3	100.0	1,120	87.1

\* 998 priority blocks

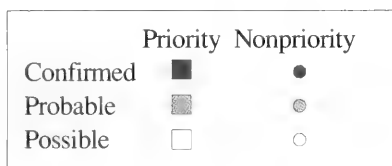
\*\* 1,286 total blocks (priority and nonpriority)



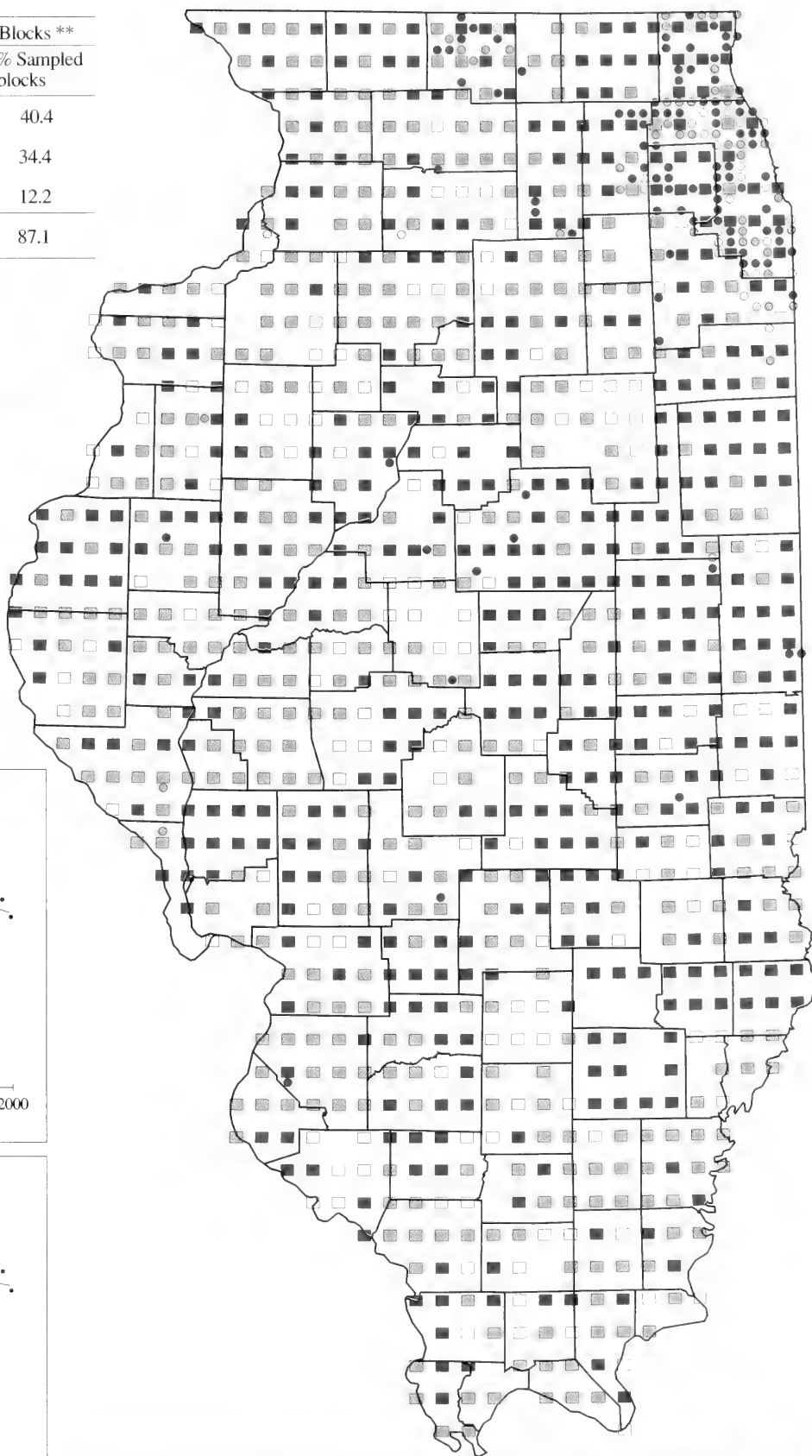
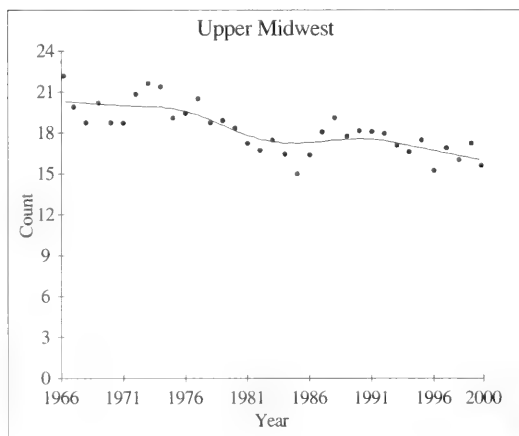
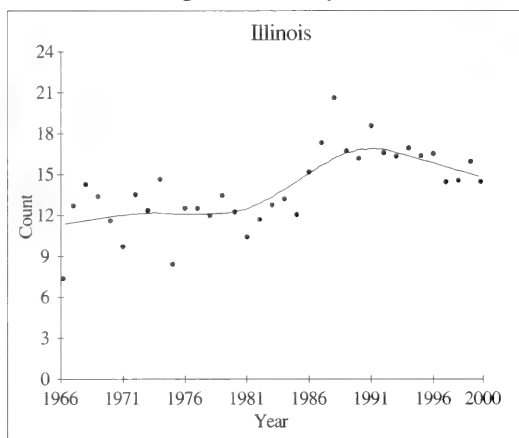
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Brown-headed Cowbird**





David Enstrom

**Code: OROR**

**Rangewide Distribution:** eastern and central U.S. from Canada south to northern South America.

**ILLINOIS**

**Abundance:** fairly common migrant and common summer resident in south, decreasing northward.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** scrubby areas, open successional woodlands, savannas, and park-like areas.

**Nest:** a woven pendant of long, green grass blades lined with finer grass and plant down, suspended from a forked terminal twig and hidden by leaves.

**Eggs:** 3–5, pale bluish white, marked with browns, purples or grays.

**Incubation:** 12 days.

**Fledging:** from 11 to 14 days.

Once common in orchards, the Orchard Oriole is found in semi-open to open wooded habitats, especially scrubby areas with scattered trees, such as pastures, fallow fields, orchards, and edge shrubs, with a preference for areas near water. The breeding range is primarily the eastern and central U.S. and northern Mexico. The male's warble is usually heard only during the earliest weeks of the breeding season. Orchard Orioles sometimes nest in small, loose colonies (Clawson

1980). Nests are suspended from the outer branches of small or isolated trees, and are parasitized by Brown-headed Cowbirds. Female Orchard Orioles, like most Neotropical migrants, are single brooded (Sealy 1980). Orchard Orioles migrate from their wintering grounds in March and April and may begin their southward migration in mid-July, making for a short breeding season. Population declines in the early 1900s may have been due to loss of savanna habitat (Jackson et al. 1996).

**Illinois History**

During the late 1800s and early 1900s, the Orchard Oriole was a common summer resident in Illinois (Cory 1909) and far more numerous than the Baltimore Oriole in the southern half of the state (Ridgway 1889). During the first half of the 1900s, Orchard Orioles were found throughout the state but the population was greatest in the southern region (Graber and Graber 1963). A substantial decline in numbers occurred between the early and mid-1900s due to the loss of orchards and other habitat changes (Graber and Graber 1963).

**Breeding Bird Survey Trends**

The trend for the Orchard Oriole population in Illinois from 1966 to 2000 is estimated at 0.1% per year (nonsignificant,  $P = 0.87$ ). For the upper Midwest, the trend estimate for the same period is -0.6% per year (nonsignificant,  $P = 0.31$ ).

*Credibility Index: IL = 1 and UM = 1.*

**Distribution**

During the atlas project, the Orchard Oriole was reported in priority blocks in 99 counties and breeding was Confirmed in 84 counties. It was most frequently reported from priority blocks in the southern and central parts of the state.

**Frequency**

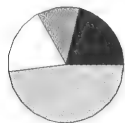
The Orchard Oriole was reported from 518 (51.9%) priority blocks and 51 nonpriority blocks. Breeding was Confirmed in 212 (21.2%) of the priority blocks, with the most frequently used breeding evidence criteria being adults feeding young (82 FY records) and fledged young (45 FL records). It is likely that Orchard Orioles nested in most blocks in which they were reported.

## Breeding Evidence

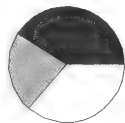
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	212	21.2	40.9	237	18.4
Probable	118	11.8	22.8	131	10.2
Possible	188	18.8	36.3	201	15.6
Totals	518	51.9	100.0	569	44.2

\* 998 priority blocks

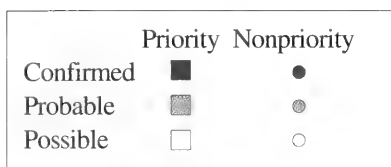
\*\* 1,286 total blocks (priority and nonpriority)



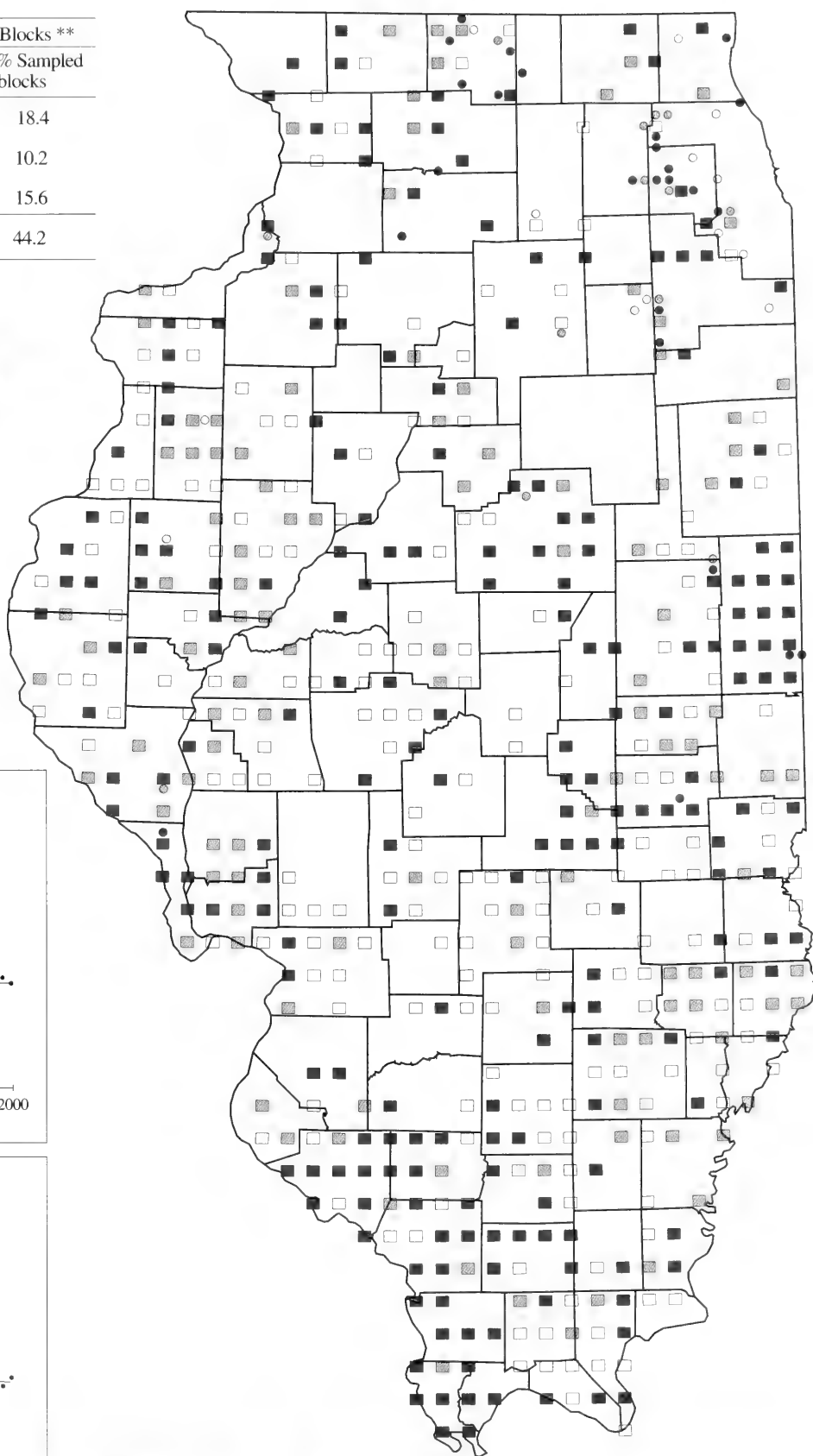
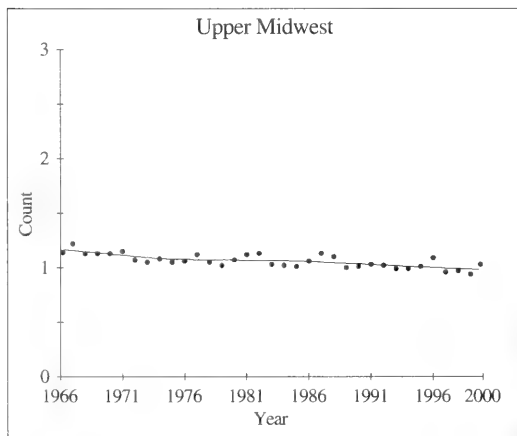
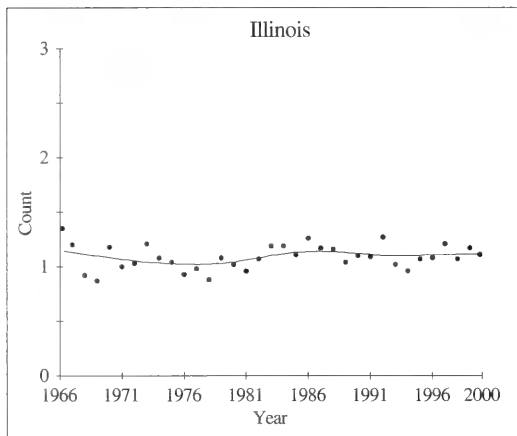
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Orchard Oriole**



Richard Day / Daybreak Imagery

**Code: BAOR**

**Rangewide Distribution:** south-central and southeastern Canada through the U.S. east of the Rockies to northern South America.

**ILLINOIS**

**Abundance:** common migrant and summer resident, rare winter visitor.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open and riparian woodlands, deciduous forest edges, open areas with scattered trees, parks, and around human habitations.

**Nest:** a suspended woven pendant of plant fiber strips lined with fine grass, plant down, and hair, attached by its rim to the outer drooping branch of a tree.

**Eggs:** 4–5, pale grayish to bluish white, marked with dark colors.

**Incubation:** 12–14 days

**Fledging:** from 12 to 14 days.

The Baltimore Oriole breeds in much of the eastern and central U.S. and southern Canada. The bright orange and black plumage of the male Baltimore Oriole makes it one of the most brilliantly colored birds in North America. Its name refers to the colors of Lord Baltimore, the governor of Maryland in colonial times. In 1983 the Baltimore Oriole was merged with the western Bullock's Oriole (*Icterus bullockii*) and given the name Northern Oriole, but was formally recognized as a separate species again in 1995 (American Ornithologists' Union 1998). Baltimore Orioles nest in open and semi-open habitats with a scattering of large

trees, including riparian woods, forest edges, parks, residential areas, farms, and orchards. They often nest in cottonwoods and sycamores and had also favored American elms prior to their demise from Dutch elm disease. Their gourd-shaped nests are constructed of string-like plant fibers, often stolen from other active or inactive oriole nests (Rising and Flood 1998) and suspended from the outer branches high off the ground in mature trees. Nest success is generally high and successful nest parasitism is low because adult orioles eject cowbirds eggs from their nests (Sealy and Neudorf 1995; Rising and Flood 1998). The Baltimore Oriole population has benefited from the increase in edge habitat created by the clearing of the forests and has adapted to nesting around human habitations (Rising and Flood 1998).

**Illinois History**

During the late 1800s and early 1900s, the Baltimore Oriole was a common summer resident in Illinois (Cory 1909). Although the Baltimore Oriole was reported throughout the state in the 1907–1909 and 1956–1958 censuses, the data were insufficient for a comparison (Graber and Graber 1963).

**Breeding Bird Survey Trends**

The trend estimate for the Baltimore Oriole population in Illinois is 0.8% per year (nonsignificant,  $P = 0.19$ ) from 1966 to 2000. The trend for the same period for the upper Midwest is estimated at  $-0.2\%$  per year (nonsignificant,  $P = 0.47$ ); however, BBS data indicate a significant increase of  $2.6\%$  per year ( $P < 0.01$ ) from 1966 to 1979 followed by a significant decrease of  $-1.2\%$  per year ( $P < 0.01$ ) from 1980 to 2000.

*Credibility Index: IL = 2 and UM = 2.*

**Distribution**

The Baltimore Oriole was widely distributed throughout the state; it was reported in priority blocks in all counties and confirmed as breeding in 95 of them. It was one of the most frequently reported and widespread species in priority blocks and may have occurred in most of the priority blocks.

**Frequency**

The Baltimore Oriole was reported from 813 (81.5%) priority blocks and 135 nonpriority blocks. Breeding was Confirmed in 503 (50.4%) of the priority blocks. The most frequently used breeding evidence criteria for these 503 records were adults feeding young, fledged young, and occupied nest (142 FY, 113 FL records, and 112 ON records, respectively). It is likely that Baltimore Orioles nested in most blocks in which they were reported.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	503	50.4	61.9	589	45.8
Probable	142	14.2	17.5	164	12.8
Possible	168	16.8	20.7	195	15.2
Totals	813	81.5	100.0	948	73.7

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



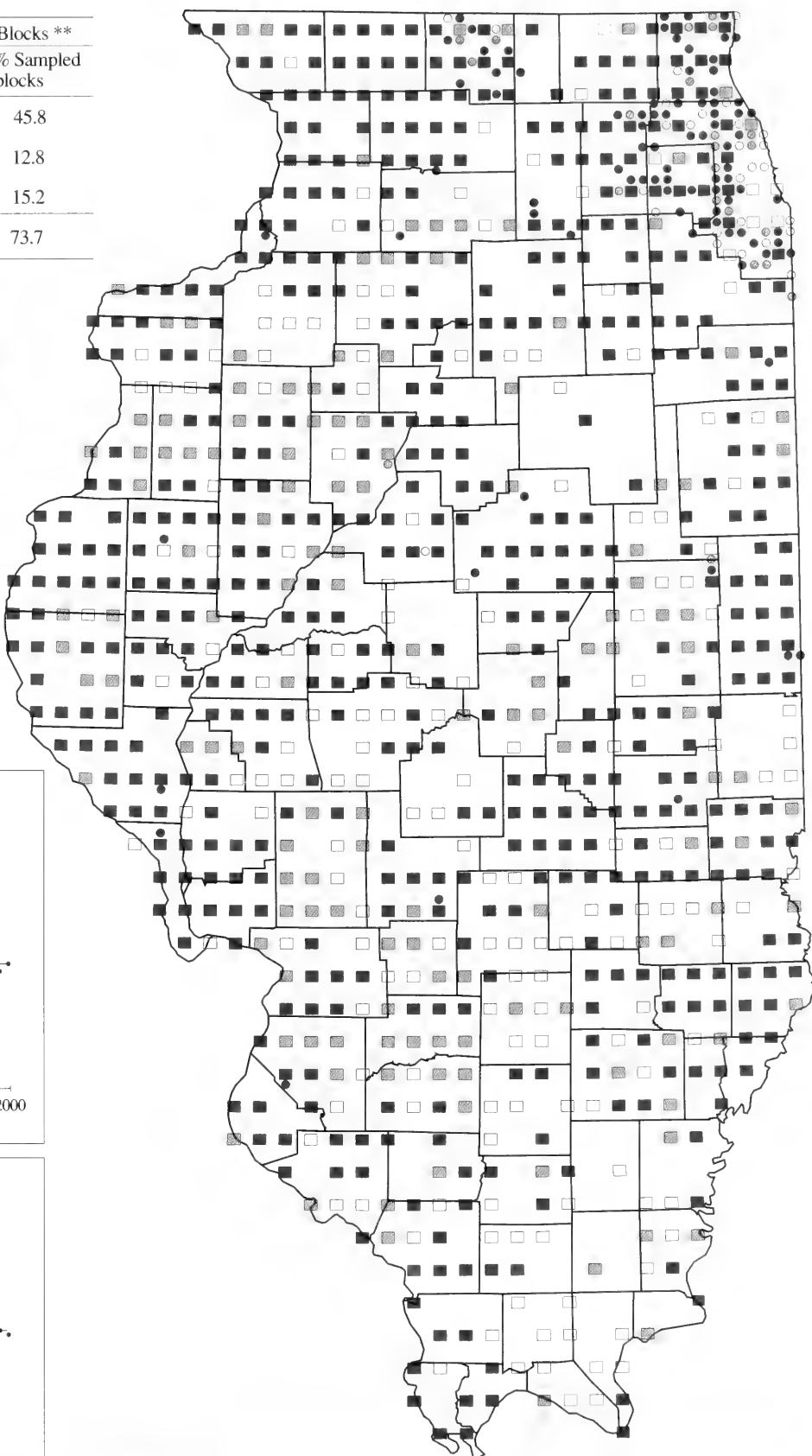
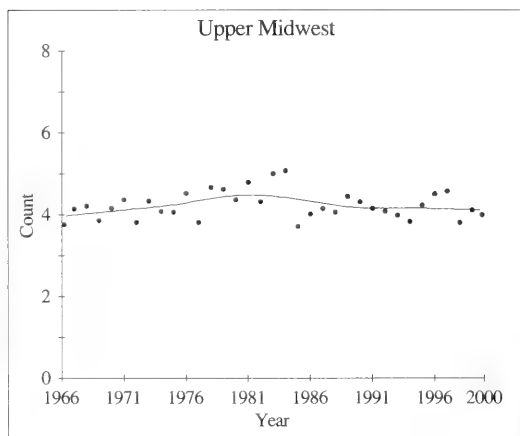
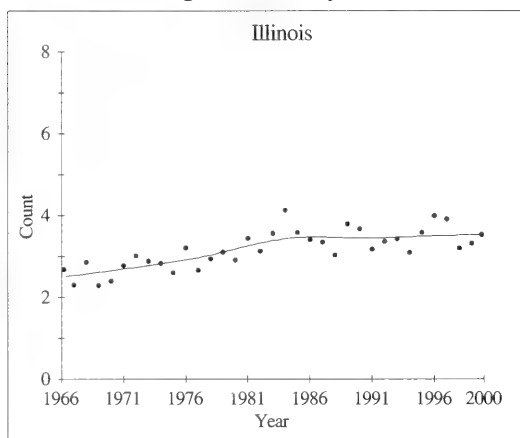
% of 998 sampled priority blocks (gray = no records for this species)



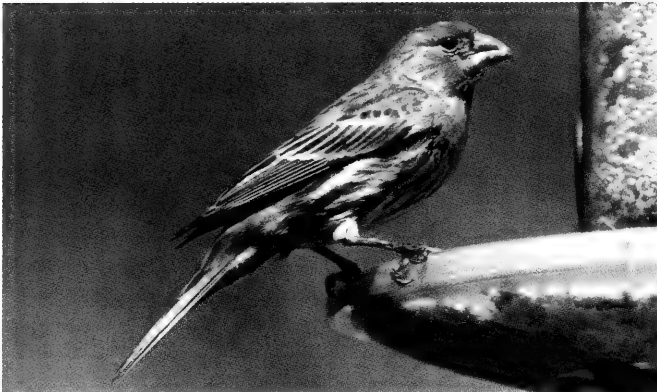
% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○

## Breeding Bird Survey Trends



**Baltimore Oriole**



Dennis Oehmke

**Code: HOF1**

**Rangewide Distribution:** native to the western U.S., now all of the U.S. and extreme southern Canada, south through Mexico.

**ILLINOIS**

**Abundance:** common permanent resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** areas with ornamental plantings, especially evergreens.

**Nest:** a cup of twigs, grass, debris, leaves, and rootlets, in trees, ornamental plants or on ledges under the eaves of buildings.

**Eggs:** 4–5, bluish white or pale bluish gray, sparsely marked with brown or black, often wreathed.

**Incubation:** 13–14 days.

**Fledging:** from 11 to 19 days.

The House Finch is native to western North America but has spread throughout the eastern U.S. from a few birds released in New York in 1942 (Robbins et al. 1986). This species now commonly breeds throughout the U.S., southern Canada, and much of Mexico. The House Finch may be unique among “non-native” species in eastern North America because it is attractive, has a pleasant song, and is not yet considered a pest. The House Finch has quickly moved into habitats that used to be the unchallenged domain of the House Sparrow and appears to be as successful as the House Sparrow. The impact of the introduction of the House Finch on the House

Sparrow population is not yet clear. In the East the House Finch inhabits urban and suburban areas almost exclusively. Nesting is strongly correlated with human habitation; common sites include small conifers, vines, hedges, and buildings. Females often have more than one brood in a season and occasionally begin second clutches several days before the first clutch has fledged (Evenden 1957; Hill 1993). House Finches are attracted to bird feeders, where they may pose a potential health threat to other birds by serving as a host for the spread of the eye disease conjunctivitis.

**Illinois History**

The first report of this species in Illinois was in November 1971 at Mt. Vernon in southern Illinois (Bohlen 1989) and the first nest was reported in 1982 at Robinson in Crawford County (Goff and Goff 1982). In the 18 years between the first known breeding attempt in 1982 and the year 2000, the House Finch has become a common breeding species throughout the state with an expansion comparable to that of the House Sparrow and European Starling.

**Breeding Bird Survey Trends**

The trend estimates for the House Finch populations are 23.0% per year (significant,  $P < 0.01$ ) for Illinois and 22.2% per year (significant,  $P < 0.01$ ) for the upper Midwest for the period 1966 to 2000. Population increases have been dramatic since the late 1980s.

*Credibility Index:* IL = 3 and UM = 3.

**Distribution**

By the end of the atlas project, House Finches were found in 88 of the state's 102 counties. It was most frequently reported from priority blocks in the eastern part of the state. In Illinois the House Finch population has expanded from east to west and it is now a common species.

**Frequency**

The House Finch was reported from 411 (41.2%) priority blocks and 113 nonpriority blocks. House Finches were relatively easy to detect and confirm because of their association with human habitations. Breeding was Confirmed in 225 (22.5%) of the priority blocks, most frequently by observation of fledged young (97 FL records) and adults feeding young (41 FY records). House Finches may have bred in all the blocks in which they were recorded.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	225	22.5	54.7	300	23.3
Probable	90	9.0	21.9	108	8.4
Possible	96	9.6	23.4	116	9.0
Totals	411	41.2	100.0	524	40.7

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



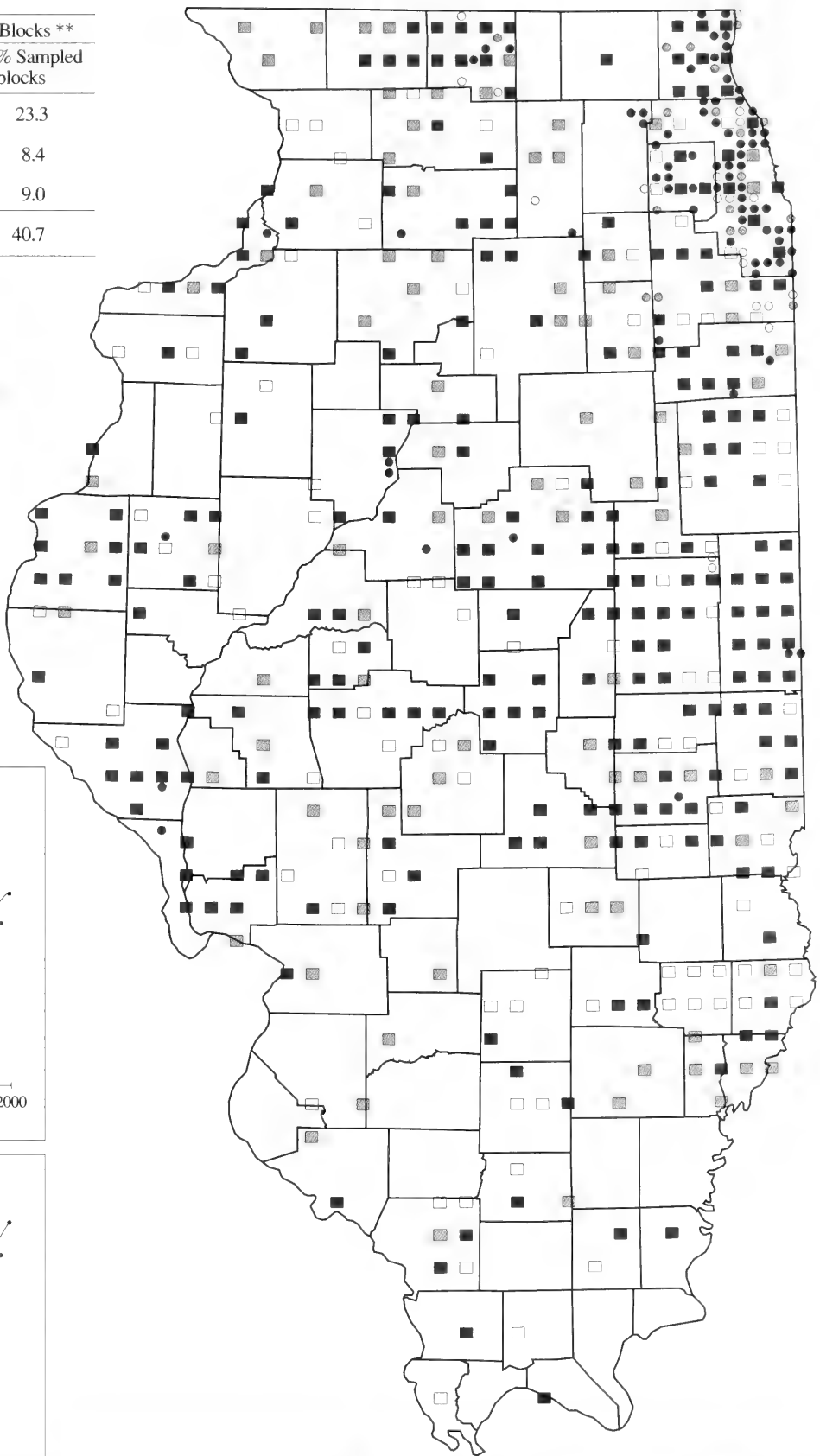
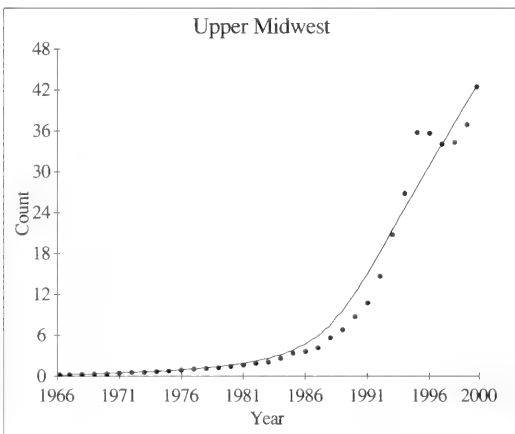
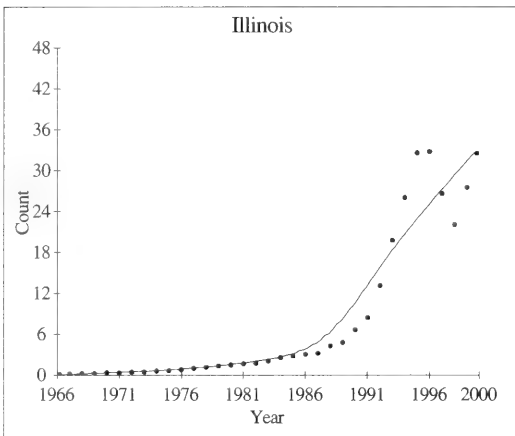
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○

## Breeding Bird Survey Trends



**House Finch**





Joe Milosevich

**Code: RECR**

**Rangewide Distribution:** Alaska and the southern half of Canada through the U.S. except the southern states to Central America; also Europe, Asia, and northern Africa.

**ILLINOIS**

**Abundance:** uncommon and irregular winter resident, very occasional summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** coniferous and mixed coniferous-deciduous forests.

**Nest:** a bulky, loosely built cup of twigs, grass, moss, rootlets, and bark strips lined with feathers, moss, and lichens, on a horizontal branch of a tree.

**Eggs:** 3–4, pale bluish or greenish white, spotted with browns or purples (mostly at large end).

**Incubation:** 12–18 days.

**Fledging:** from 15 to 20 days.

relies almost solely on conifer seeds for food. Nomadic movements and a long potential breeding season are adaptations to the variable availability of its food source (Adkisson 1996). Red Crossbills may breed in every month of the year somewhere in its worldwide range (Benkman 1990).

**Illinois History**

The Red Crossbill is not considered a regular breeding species in Illinois, which is at the southern edge of the breeding range. The first recorded nests occurred in McLean and Lake counties in 1973, followed by two records in Sangamon County in 1976 (Bohlen 1989). Only the nest at Illinois Beach State Park in Lake County was successful. Summer observations in the Sand Ridge State Forest in Mason County during the 1980s suggest possible nesting there.

**Breeding Bird Survey Trends**

Trends are difficult to estimate for nomadic species such as the Red Crossbill. Illinois does not have a stable breeding population of Red Crossbills and BBS data are not adequate for estimating trends for this species. The trend for 1966–2000 is estimated at 9.7% per year (nonsignificant,  $P = 0.21$ ) for the upper Midwest; the small relative abundance and sample size contribute to the low credibility index.

*Credibility Index: IL = none and UM = 3.*

**Distribution**

All records of nesting Red Crossbills in Illinois are noteworthy. During the atlas project, they were limited to mature coniferous trees at the Morton Arboretum in DuPage County. Red Crossbills are irregular breeders and could potentially breed in expansive tracts of evergreens, such as those at Sand Ridge State Forest in Mason County, Big River State Forest in Henderson County, Lowden-Miller State Forest in Ogle County, and Illinois Beach State Park in Lake County.

**Frequency**

The Red Crossbill was reported from one (0.1%) priority block and three nonpriority blocks (two of which are adjacent to the priority block in DuPage County). Breeding was Confirmed in the priority block (a female observed building a nest at the Morton Arboretum) and two of the nonpriority blocks.

In North America, Red Crossbills breed primarily in the western U.S., western and southern Canada, and parts of Mexico. Wandering birds occasionally nest as far south as the Gulf states. Red Crossbills inhabit mature coniferous forests with abundant cone crops. Its distinctive bill, with curved mandibles crossed at the tip, is an adaptation for prying open cones in order to extract the seeds. This finch

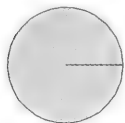


## Breeding Evidence

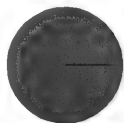
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	1	0.1	100.0	3	0.2
Probable	0	0.0	0.0	1	0.1
Possible	0	0.0	0.0	0	0.0
Totals	1	0.1	100.0	4	0.3

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

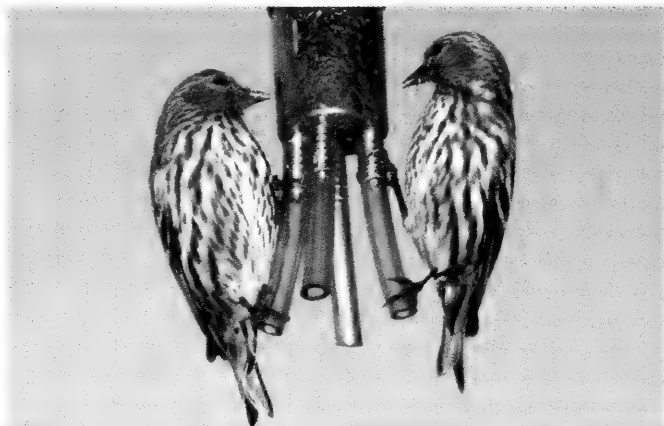


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	■	●
Possible	□	○



**Red Crossbill**



Eric Walters

## Code: PISI

**Rangewide Distribution:** southern Alaska and the southern half of Canada to southern Mexico.

## ILLINOIS

**Abundance:** common (irregular) migrant and winter resident, occasional summer resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** coniferous and mixed coniferous-deciduous forests, woodlands, parks, suburbs.

**Nest:** a saucer of twigs, rootlets, and grass lined with fine rootlets, moss, fur, and feathers, in a tree.

**Eggs:** 3-4, pale greenish blue, spotted with browns or black, usually wreathed.

**Incubation:** 13 days.

**Fledging:** from 14 to 15 days.

Pine Siskins breed in the western and northern U.S. and western and southern Canada; sporadic breeding occurs as far south as a line from Oklahoma to New Jersey and in the Appalachian Mountains. Known for nomadic and irruptive winter wanderings, Pine Siskins are sometimes common and other times rare or absent at a given location, possibly as a response to variability in the abundance of seeds. These small finches primarily inhabit coniferous or mixed coniferous-deciduous habitats in forests, parks, and residential areas. The gregarious siskins often forage in flocks and are attracted to bird feeders with sunflower or niger (thistle) seeds. They nest in loose colonies (Weaver and West 1943;

Dawson 1997) and nests are usually built in conifers and concealed in the foliage (Bohlen 1989). Pair formation and nesting may begin as early as late February. In cold climates nesting females are fed by their mates while incubating in order to protect the eggs and young from freezing temperatures (Dawson 1997).

## Illinois History

Pine Siskins regularly breed as far south as Minnesota and Wisconsin but breeding attempts in Illinois are apparently recent as early accounts of the Pine Siskin in Illinois are non-existent. Chapel (1984) provided a detailed chronology of Pine Siskin nests in Illinois, the first of which occurred in McLean County in 1973. Between 1976 and 1981 four more nesting attempts were made and two of those resulted in successfully fledged young. In 1982 a number of breeding attempts were reported, including eight in Urbana (Champaign County) and four at widely scattered locations in northern Illinois; about half of these nests were successful. Sporadic nesting has continued in recent years. Most, if not all, Illinois nests have been found in conifers.

## Breeding Bird Survey Trends

The BBS does not adequately sample the Pine Siskin population in Illinois, which is localized and small. For the upper Midwest, the trend estimate is 5.7% per year (nonsignificant,  $P = 0.07$ ).

*Credibility Index: IL = none and UM = 2.*

## Distribution

Atlas data indicate that the Pine Siskin continues to be a rare and sporadic breeding species in Illinois. It was reported in priority blocks from seven counties and Confirmed as breeding in three of them. To date, the southernmost breeding records are in Sangamon and Champaign counties, with numerous records of nesting or attempted nesting in Urbana.

## Frequency

The Pine Siskin was reported from 10 (1.0%) priority blocks and 12 nonpriority blocks. Breeding was Confirmed in 3 of the priority blocks, one each in Champaign, DuPage and Winnebago counties. The breeding evidence criteria for the priority block records were nest building (2 NB records) and nest with young (1 NY record). Nesting may have occurred in some of the priority blocks with Probable or Possible records.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	3	0.3	30.0	8	0.6
Probable	4	0.4	40.0	9	0.7
Possible	3	0.3	30.0	5	0.4
Totals	10	1.0	100.0	22	1.7

\* 998 priority blocks

\*\* 1,286 total blocks (priority and nonpriority)



% of 998 sampled priority blocks (gray = no records for this species)

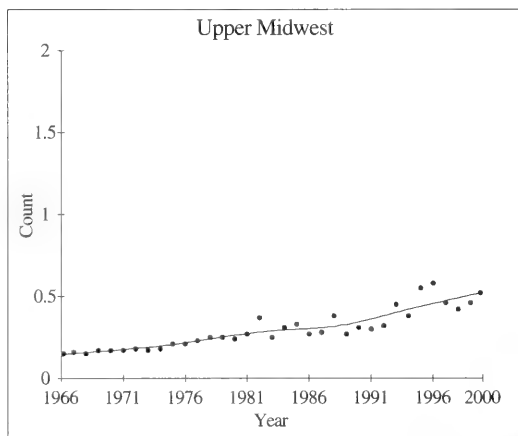


% of priority blocks with records for this species

	Priority	Nonpriority
Confirmed	■	●
Probable	▒	◐
Possible	□	○



## Breeding Bird Survey Trends



**Pine Siskin**



Dennis Oehmke

**Code:** AMGO

**Rangewide Distribution:** southern Canada and most of the U.S., south to northern Mexico.

**ILLINOIS**

**Abundance:** very common migrant, summer resident and winter resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** weedy and cultivated fields, open deciduous and riparian woodlands.

**Nest:** a cup of forbs and other pliable vegetation lined with plant down, in a shrub or small tree.

**Eggs:** 4–6, pale blue or bluish white.

**Incubation:** 10–12 days.

**Fledging:** from 11 to 17 days.

The American Goldfinch is an abundant bird with plenty of aliases, including thistle bird and wild canary. This small finch breeds in much of the U.S. from north of the southern tier of states to southern Canada. The highly gregarious Goldfinch is found in flocks except during their brief reproductive period from late June through September. During the winter, flocks are nomadic, driven by the search for food. Goldfinches occur in weedy fields, floodplain forests, forest edges, early second-growth forests, pastures, and suburban areas; they prefer weedy fields with scattered brush for nesting. Goldfinches are almost exclusively seed eaters and have an affinity for thistle as a source of food and nesting material. They are common at bird feeders with niger

(thistle) and sunflower seeds, especially in winter. Nests are placed in thistle (*Cirsium* spp.) or in a sturdy upright fork of a deciduous shrub or small tree from 3 to 15 feet above ground. Nesting begins relatively late in the summer (late June through September) and the goldfinch usually has only one brood per year. Goldfinches rarely raise Brown-headed Cowbird chicks successfully, perhaps because their seed diet is nutritionally insufficient for cowbirds (Holcomb 1969; Middleton 1977).

**Illinois History**

The American Goldfinch was a common to abundant summer resident in Illinois a century ago (Cory 1909) and remains so today (Bohlen 1989). It is a native species that has successfully adapted to the changes in the landscape during the twentieth century. Graber and Graber (1963) found that the population remained virtually unchanged between 1909 and 1957, and that the greatest densities occurred in the northern part of the state.

**Breeding Bird Survey Trends**

From 1966 to 2000 the trends for the American Goldfinch population are estimated at –0.5% per year (nonsignificant,  $P = 0.56$ ) in Illinois and 0.0% per year (nonsignificant,  $P = 0.96$ ) for the upper Midwest. BBS data from 1966 to 1979 for the upper Midwest indicate a decline of –4.5% per year (significant,  $P < 0.01$ ), which was followed by an increase of 1.0% per year (significant,  $P < 0.01$ ) from 1980 to 2000.

**Credibility Index:** IL = 2 and UM = 2.

**Distribution**

The American Goldfinch was reported in all 102 counties and was one of the most frequently reported species from priority blocks during the atlas project (Table 4). It probably breeds in every Illinois township.

**Frequency**

The American Goldfinch was reported from 966 (96.8%) priority blocks and 177 nonpriority blocks. Breeding was Confirmed in 238 (23.8%) of the priority blocks, most frequently by observation of nest building (102 NB records) followed by fledged young (37 FL records) and adults feeding young (35 FY records). Even though the goldfinch was an easy species to detect, its nesting activities occur relatively late in the season. Consequently, by the time goldfinches began nesting, the surveys for some blocks had been completed for the season. The goldfinch may have nested in nearly all priority blocks.

## Breeding Evidence

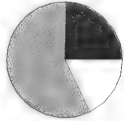
	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	238	23.8	24.6	322	25.0
Probable	557	55.8	57.7	638	49.6
Possible	171	17.1	17.7	183	14.2
Totals	966	96.8	100.0	1,143	88.9

\* 998 priority blocks

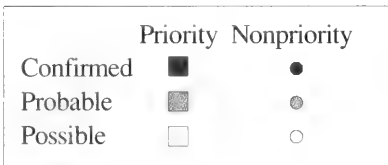
\*\* 1,286 total blocks (priority and nonpriority)



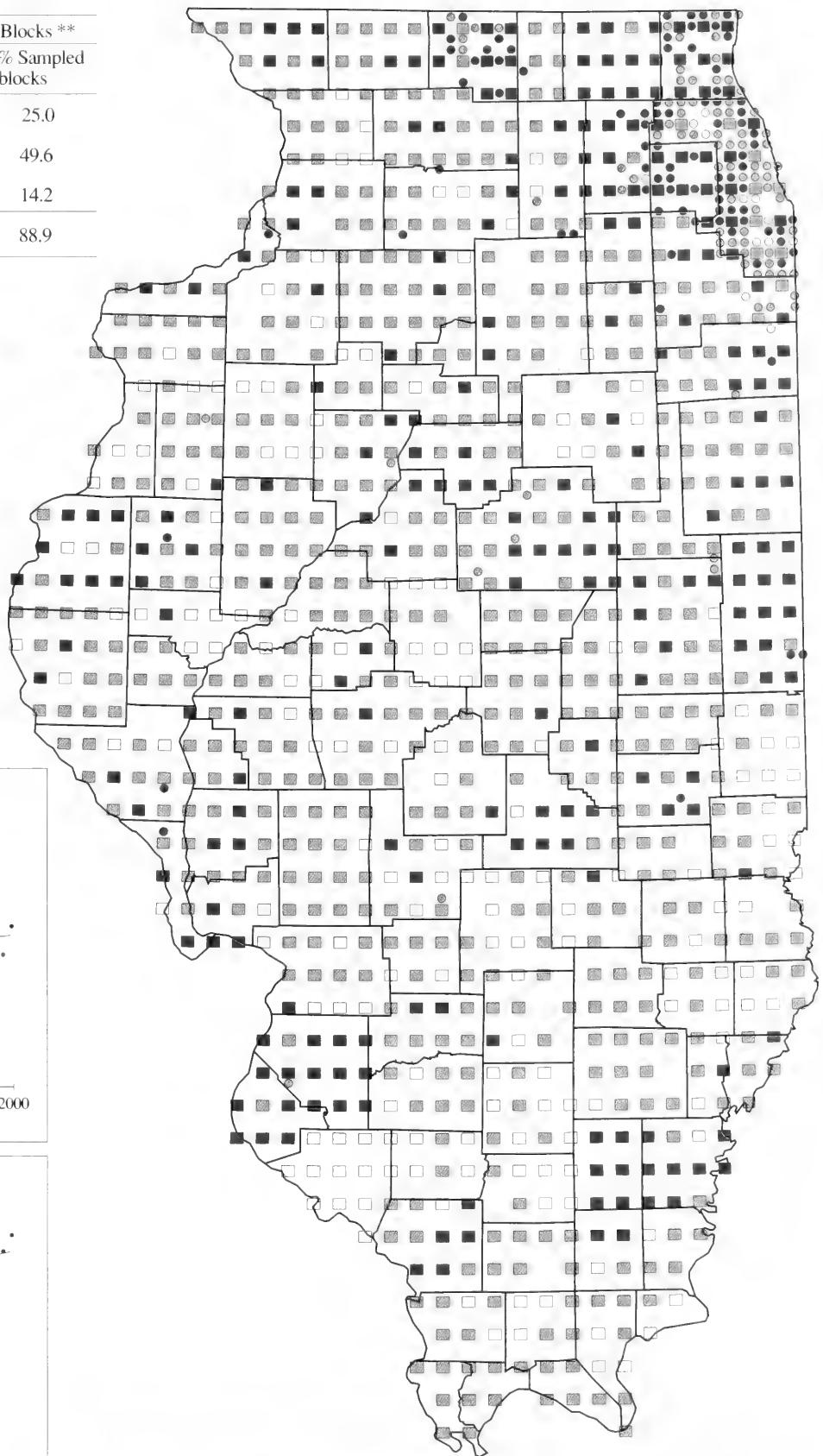
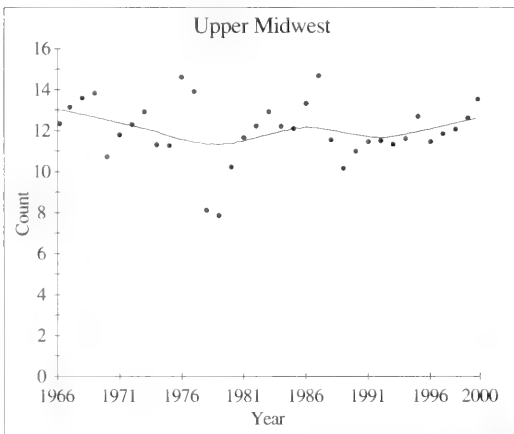
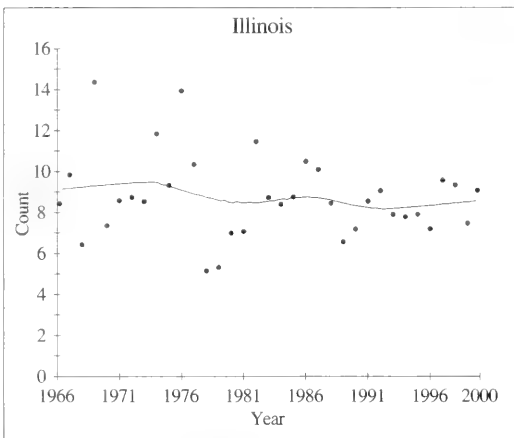
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**American Goldfinch**



Dennis Oehmke

**Code:** HOSP

**Rangewide Distribution:** Europe, Asia, Africa, South America, southern half of Canada, south through all of the U.S. to Panama.

**ILLINOIS**

**Abundance:** abundant permanent resident.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open areas especially around human habitations.

**Nest:** a spherical cavity of grass and forbs lined with feathers and hair, in a building, tree, or cavity.

**Eggs:** 4–6, white, greenish or bluish, marked with gray or brown.

**Incubation:** 10–13 days.

**Fledging:** from 14 to 17 days.

The House Sparrow is an Old World species that was first successfully introduced into the U.S. in New York in the 1850s and into other states in subsequent years. It spread quickly throughout North America and grew to an estimated continental population of 150 million by 1943 (Wing 1943). It breeds in the southern half of Canada and throughout the U.S., with the greatest abundance in the Midwest and the eastern U.S. (Lowther and Cink 1992; Jackson et al. 1996). The House Sparrow is suited to nearly all habitats in rural, suburban, and urban environments, except heavily forested areas. House Sparrows are loosely colonial and nest wherever cavities or semi-enclosed spaces are available, including buildings, trees, and nest boxes. It usurps the cavities used by native species, such as bluebirds, swallows, chickadees, and titmice. Nesting begins early in the spring and a pair may raise two or three broods per season (Will 1973; Lowther 1983). House Sparrows eat primarily grain (e.g., corn, oats,

and wheat) and weed seeds. In recent years urban birds have found an easy protein source on the grills of parked cars. The House Sparrow is a conservation concern because of its impact on native species. In recent decades the North American population has generally declined, due in part to more intensive farming practices (Lowther and Cink 1992).

**Illinois History**

The arrival of the House Sparrow in Illinois is the result of four introductions between 1868 and 1876 (Barrows 1889). It spread rapidly and occupied all of Illinois by 1886. This led Ridgway (1889) to comment, “Concerning this unmitigated pest we have little to say, further than to bewail the misfortune of its introduction, and to plead for its extermination. It is in every respect a first-class nuisance, to be classed along with the house-rat and other noxious vermin.” Cory (1909) added that it “has now unfortunately become very numerous . . . and is most pugnacious, driving away our native insectivorous birds, and has proved itself a most undesirable addition to our avifauna.” The summer population remained nearly constant between the 1909 and 1957 censuses; the summer population was estimated at over five million birds in 1958 (Graber and Graber 1963).

**Breeding Bird Survey Trends**

Sample size and relative abundance for the House Sparrow are among the highest for all species analyzed by the BBS in the state and the region. According to BBS data, the House Sparrow population declined at  $-2.6\%$  per year (significant,  $P < 0.01$ ) in Illinois and  $-2.3\%$  per year (significant,  $P < 0.01$ ) in the upper Midwest from 1966 to 2000. The decline in the House Sparrow population in Illinois coincided with the arrival of the House Finch leading to speculation of a link between the two trends.

*Credibility Index:* IL = 2 and UM = 2.

**Distribution**

As expected, the House Sparrow was abundant and widely distributed in the state during the atlas project. It was found and Confirmed in all counties. The House Sparrow was one of the most frequently reported species from priority blocks during the atlas project (Table 4). It may breed in every Illinois township.

**Frequency**

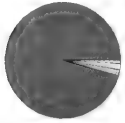
The House Sparrow was reported from 988 (99.0%) priority blocks and 180 nonpriority blocks. Breeding was Confirmed in 953 (95.5%) of the priority blocks, with the most frequently used breeding evidence criteria being occupied nest, nest with young, adults feeding young, and fledged young (305 ON, 167 NY, 152 FY, and 148 FL records, respectively). It is possible that the House Sparrow bred in all of the priority blocks and the majority of nonpriority blocks as well.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	953	95.5	96.5	1,102	85.7
Probable	20	2.0	2.0	36	2.8
Possible	15	1.5	1.5	30	2.3
Totals	988	99.0	100.0	1,168	90.8

\* 998 priority blocks

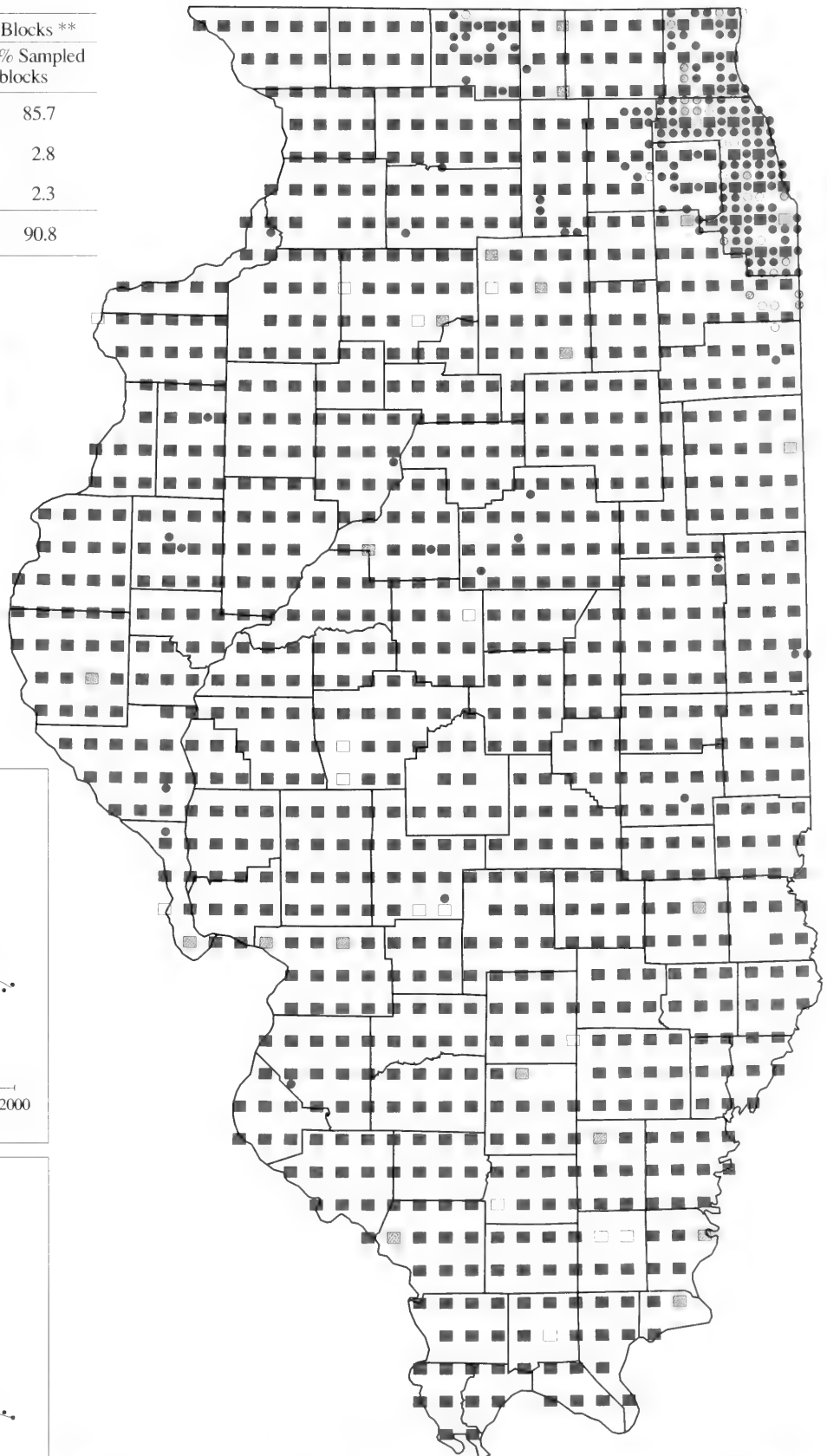
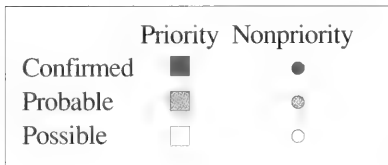
\*\* 1,286 total blocks (priority and nonpriority)



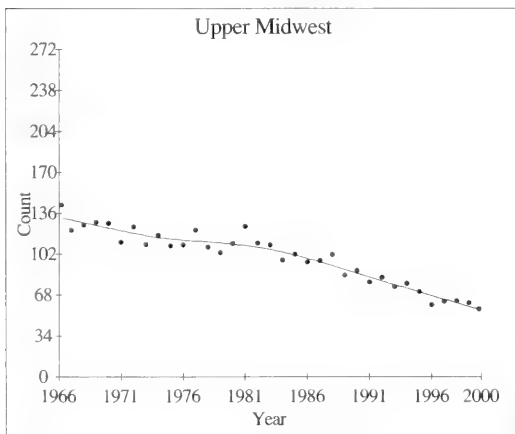
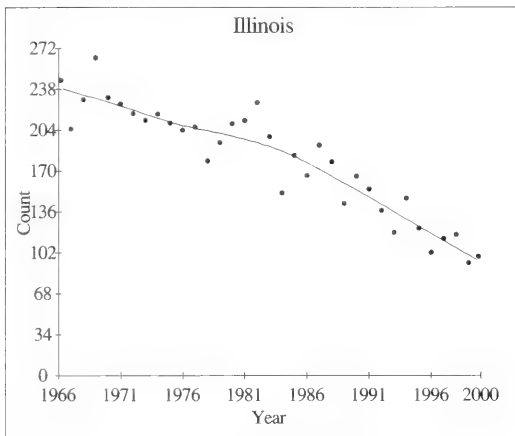
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**House Sparrow**





Dennis Oehmke

## Code: ETSP

**Range-wide Distribution:** Europe, Asia; central U.S. along the Mississippi and Illinois rivers between St. Louis, MO, and Rock Island, IL.

## ILLINOIS

**Abundance:** common permanent resident in the west-central counties.

**Endangered/Threatened Status:** none.

**Breeding Habitat:** open areas, especially around rural human habitations; near cattle and pig lots.

**Nest:** a cup of grass and forbs lined with feathers, in a tree cavity or artificial nest box.

**Eggs:** 4–6, white to pale gray, marked with browns.

**Incubation:** 13–14 days.

**Fledging:** from 12 to 14 days.

The Eurasian Tree Sparrow is an Old World species with an extensive range in Europe and Asia. A small number of individuals were released in the U.S. in St. Louis, Missouri, in 1870. Although a population was quickly established in St. Louis, the Eurasian Tree Sparrow was displaced in urban areas by the subsequent arrival of the House Sparrow (Widmann 1889 in Barlow and Leckie 2000). Presently Eurasian Tree Sparrows primarily inhabit wooded parks, farms, rural woodlots, and hedgerows. In the U.S. this species is limited to Illinois, Missouri, and Iowa with the population currently centered in west-central Illinois along the Illinois River. This species is a cavity nester and may produce three broods per year. The Eurasian Tree Sparrow is a close relative of the House Sparrow and is similar in

appearance, behavior, and nesting requirements. When these two species compete for nest sites, the House Sparrow generally dominates (Anderson 1978; Barlow and Leckie 2000). Its modest population growth and range expansion may be primarily due to less successful competition with the House Sparrow (Anderson 1978).

## Illinois History

In April of 1870, a small number of Eurasian Tree Sparrows (along with House Sparrows and several other Old World finches from Germany) were introduced into the St. Louis area (Flieg 1971; Barlow and Leckie 2000). That small group flourished and remained fairly local on the Missouri side of the Mississippi River for decades. Cory (1909) stated that the Eurasian Tree Sparrow would probably be observed in Illinois “in the near future.” An exact first occurrence for Illinois is not known. The Eurasian Tree Sparrow population may be experiencing growth in Illinois, as evidenced by Spring and Christmas Bird Counts (Bohlen 1989).

## Breeding Bird Survey Trends

In Illinois the long-term trend estimate for the Eurasian Tree Sparrow population indicates an increase of 6.7% per year (nonsignificant,  $P = 0.18$ ). The long-term estimate for the upper Midwest is 6.6% per year (nonsignificant,  $P = 0.17$ ). *Credibility Index:* IL = 2 and UM = 2.

## Distribution

During the atlas project, the Eurasian Tree Sparrow was found in priority blocks in 23 counties and Confirmed as breeding in 20 of them. It is limited to west-central Illinois from the St. Louis area in the south to Henderson County in the north. This species actually occurs farther north than the atlas records indicate—to Mercer and Rock Island counties along the Mississippi River and Tazewell County along the Illinois River. The population may be expanding even farther up both river systems.

## Frequency

The Eurasian Tree Sparrow was reported from 144 (14.4%) priority blocks and 4 nonpriority blocks. Breeding was Confirmed in 111 (11.1%) of the priority blocks, mostly by observation of occupied nests (31 ON records), adults feeding young (27 FY records), and fledged young (27 FL records). This was a relatively easy species to identify and confirm and nesting probably occurred in all blocks in which it was recorded.

## Breeding Evidence

	Priority Blocks *			All Blocks **	
	No.	% Sampled Blocks	% Blocks with records	No.	% Sampled blocks
Confirmed	111	11.1	77.1	114	8.9
Probable	13	1.3	9.0	14	1.1
Possible	20	2.0	13.9	20	1.6
Totals	144	14.4	100.0	148	11.5

\* 998 priority blocks

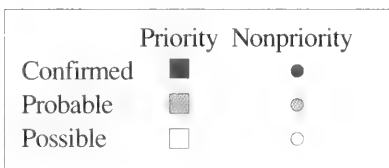
\*\* 1,286 total blocks (priority and nonpriority)



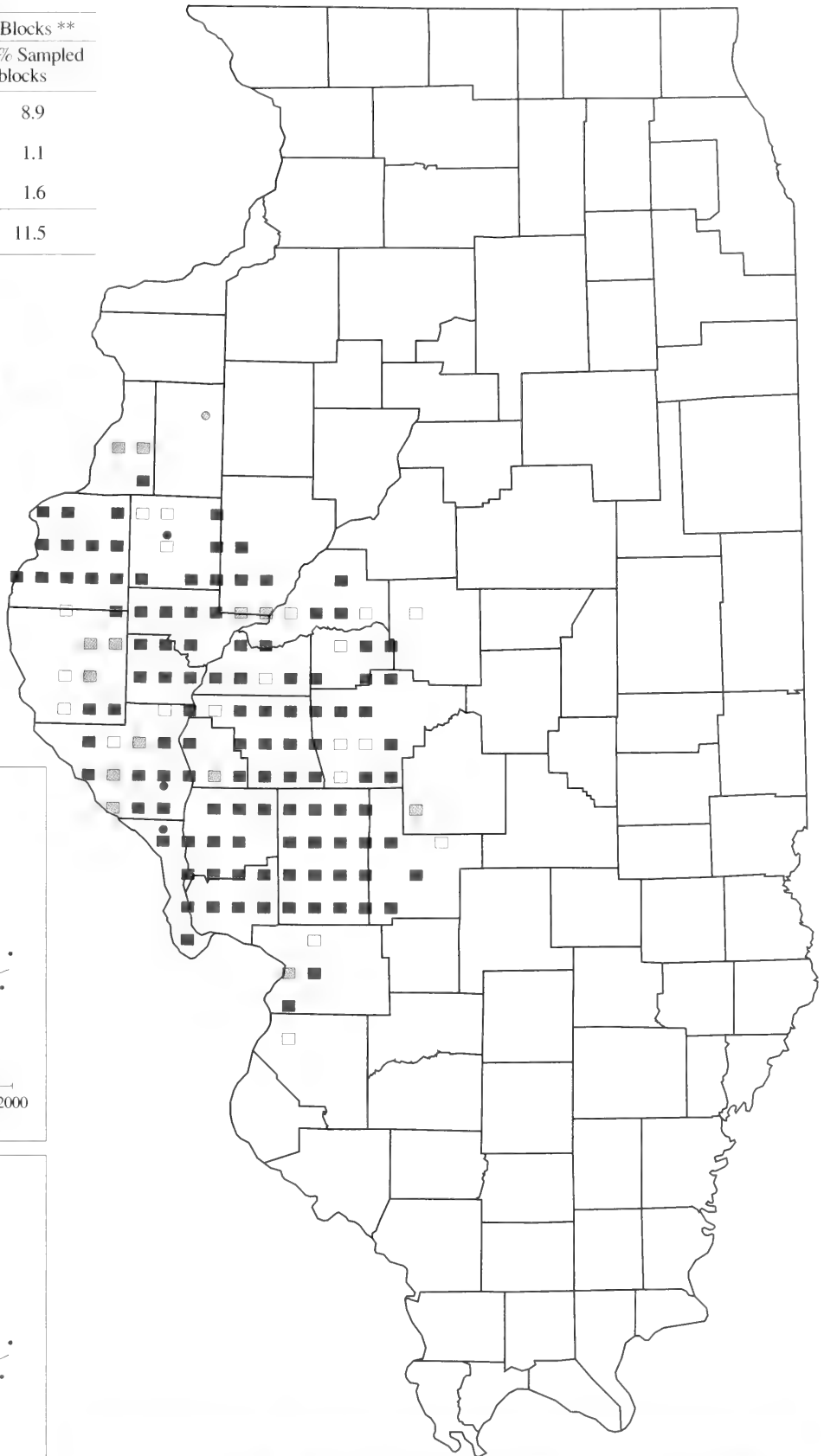
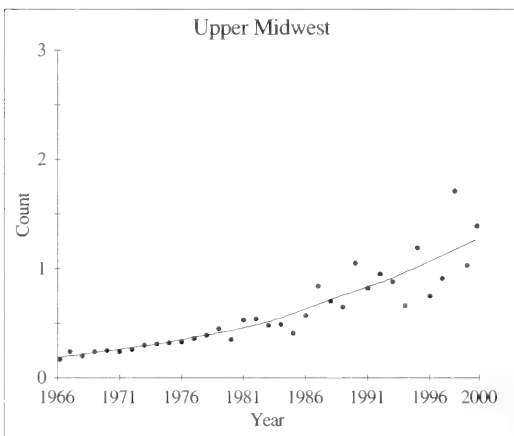
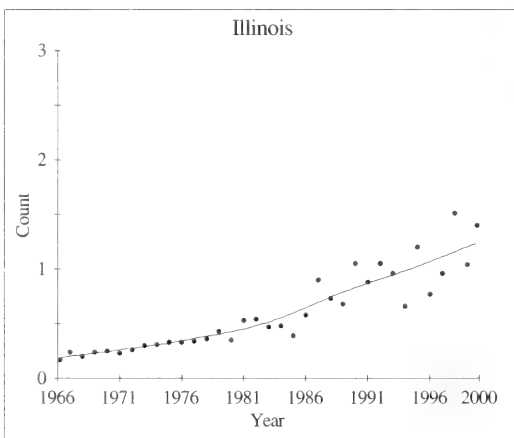
% of 998 sampled priority blocks (gray = no records for this species)



% of priority blocks with records for this species



## Breeding Bird Survey Trends



**Eurasian Tree Sparrow**



**Appendix A. County index for sampled atlas blocks. The name of the 7.5-minute quadrangle in which the block occurs is listed. Blocks occurring in more than one county were assigned to the county with the most area in the block. Codes for priority blocks end in “3”.**

County	Quadrangle	Block	County	Quadrangle	Block	County	Quadrangle	Block
Adams	Augusta	136B3	Calhoun	Grafton	222B3	Clark	Moriah	208B3
Adams	Bowen	135A3	Calhoun	Hamburg	197B3	Clark	Snyder	182C3
Adams	Camp Point	135D3	Calhoun	Nutwood	197D3	Clark	West Union	209B3
Adams	Clayton	136C3	Calhoun	Pleasant Dale Valley	194C1	Clark	Westfield East	183B3
Adams	Coatsburg	135C3	Calhoun	Pleasant Dale Valley	194C3	Clay	Clay City	232A3
Adams	Columbus	164B3	Carroll	Blackhawk	020B3	Clay	Flora	232B3
Adams	Fishhook	163C3	Carroll	Blackhawk	020B4	Clay	Louisville East	214C3
Adams	Kellerville	163B3	Carroll	Boone Branch	021A3	Clay	Louisville West	215D3
Adams	Liberty	164A3	Carroll	Brookville	022C3	Clay	Sailor Springs	214D3
Adams	Lima	134B3	Carroll	Fairhaven	040B3	Clay	Xenia NE	231A3
Adams	Long Island	134C3	Carroll	Hazelhurst	039B3	Clinton	Beckemeyer	228C3
Adams	Loraine	135B3	Carroll	Lanark	021D3	Clinton	Boulder	229B3
Adams	Marblehead	165D3	Carroll	Loran	021B3	Clinton	Breese	227D3
Adams	Mendon	134D3	Carroll	Milledgeville	040A3	Clinton	Carlyle	228D3
Adams	Payson	164C3	Carroll	Mount Carroll	021C3	Clinton	Centralia West	229C3
Adams	Quincy East	165A3	Carroll	Pleasant Valley	020A3	Clinton	Keyesport	228A3
Adams	Richfield	164D3	Carroll	Shannon	022B3	Clinton	St. Rose	227A3
Adams	Tioga	134A3	Carroll	Thomson	041A3	Clinton	Stolletown	228B3
Alexander	Cache	283D3	Carroll	Wacker	020D3	Coles	Arcola	178A6
Alexander	Cairo	284C3	Cass	Arenzville East	161A3	Coles	Ashmore	179D3
Alexander	Dongola	280C3	Cass	Arenzville West	161B3	Coles	Ashmore	179D5
Alexander	McClure	281C3	Cass	Ashland	160A3	Coles	Charleston North	179C3
Alexander	Mill Creek	281D3	Cass	Clear Lake	138D3	Coles	Charleston South	184B2
Alexander	Tamms	283A3	Cass	Newmansville	139D3	Coles	Charleston South	184B3
Alexander	Thebes	283B3	Cass	Virginia	160B3	Coles	Charleston South	184B4
Bond	Beaver Creek	218C3	Champaign	Allerton	151B3	Coles	Charleston South	184B6
Bond	Greenville	218B3	Champaign	Bondville	146D2	Coles	Cooks Mills	178C3
Bond	Mulberry Grove	218A3	Champaign	Bondville	146D3	Coles	Humboldt	178D3
Bond	Pleasant Mound	218D3	Champaign	Bondville	146D5	Coles	Kansas	180C3
Bond	Pocahontas	219D3	Champaign	Fisher	120D3	Coles	Mattoon East	185A2
Bond	Sorento South	219A3	Champaign	Flatville	147A3	Coles	Mattoon East	185A3
Boone	Belvidere NE	011A3	Champaign	Gifford	119D3	Coles	Mattoon West	185B3
Boone	Belvidere North	011D3	Champaign	Homer	148C3	Coles	Westfield West	184A3
Boone	Belvidere South	025A3	Champaign	Longview	152A3	Cook	Arlington Heights	029C1
Boone	Caledonia	011C6	Champaign	Mahomet	146B2	Cook	Arlington Heights	029C2
Boone	Capron	010B3	Champaign	Penfield	118C1	Cook	Arlington Heights	029C3
Boone	Garden Prairie	010C3	Champaign	Penfield	118C3	Cook	Arlington Heights	029C4
Boone	Riley	026B3	Champaign	Rankin	118B5	Cook	Arlington Heights	029C5
Brown	Cooperstown	162A3	Champaign	Rantoul	119C3	Cook	Arlington Heights	029C6
Brown	Lake Mt. Sterling	136D3	Champaign	Rising	146A3	Cook	Barrington	028B5
Brown	Mount Sterling	163A3	Champaign	Royal	148B3	Cook	Barrington	028B6
Brown	Ripley	137C3	Champaign	St. Joseph	147D3	Cook	Berwyn	032D1
Brown	Versailles	162B3	Champaign	Thomasboro	147B3	Cook	Berwyn	032D2
Bureau	Buda	064C3	Champaign	Thomasboro	147B5	Cook	Berwyn	032D3
Bureau	Buda Northeast	064A3	Champaign	Tolono	153A3	Cook	Berwyn	032D4
Bureau	Depue	063D3	Champaign	Urbana	147C1	Cook	Berwyn	032D5
Bureau	La Moille	048D3	Champaign	Urbana	147C3	Cook	Berwyn	032D6
Bureau	Ladd	062B3	Champaign	Villa Grove NW	152B3	Cook	Blue Island	055B1
Bureau	Malden	063A3	Christian	Clarksdale	189A3	Cook	Blue Island	055B2
Bureau	Manlius	064B3	Christian	Grove City	174A3	Cook	Blue Island	055B3
Bureau	Mendota West	049C3	Christian	Morrisonville	189B3	Cook	Blue Island	055B4
Bureau	Mineral	065A3	Christian	Niantic	156C3	Cook	Blue Island	055B6
Bureau	Neponset	065D3	Christian	Owaneco	188B3	Cook	Calumet City	055D1
Bureau	New Bedford	047C3	Christian	Pana	188A3	Cook	Calumet City	055D2
Bureau	Ohio	048C3	Christian	Stonington	175B3	Cook	Calumet City	055D3
Bureau	Princeton North	063B3	Christian	Taylorville	174D3	Cook	Calumet City	055D4
Bureau	Princeton South	063C3	Christian	Willeys	175C3	Cook	Calumet City	055D5
Bureau	Putnam	078B3	Clark	Annapolis	208A3	Cook	Chicago Loop	031B1
Bureau	Walnut	047D3	Clark	Casey	183C3	Cook	Chicago Loop	031B2
Bureau	Whitefield	077A3	Clark	Clark Center	183D3	Cook	Chicago Loop	031B3
Bureau	Wyandot	064D3	Clark	Clarksville	183A3	Cook	Chicago Loop	031B4
Bureau	Yorktown	046D3	Clark	Dennison	182A3	Cook	Chicago Loop	031B5
Calhoun	Annada	195D3	Clark	Fairbanks	209A3	Cook	Chicago Loop	031B6
Calhoun	Brussels	223A3	Clark	Hutton	182D3	Cook	Chicago Loop East	031A5
Calhoun	Foley	197C3	Clark	Marshall	182B3	Cook	Dyer	056A1

Appendix A (cont.).

County	Quadrangle	Block	County	Quadrangle	Block	County	Quadrangle	Block
Cook	Dyer	056A2	Cook	Streamwood	028C3	DuPage	West Chicago	033B3
Cook	Elmhurst	032B2	Cook	Streamwood	028C4	DuPage	West Chicago	033B5
Cook	Elmhurst	032B6	Cook	Streamwood	028C5	DuPage	West Chicago	033B6
Cook	Englewood	031C1	Cook	Streamwood	028C6	DuPage	Wheaton	033D1
Cook	Englewood	031C2	Cook	Tinley Park	054D1	DuPage	Wheaton	033D3
Cook	Englewood	031C3	Cook	Tinley Park	054D2	DuPage	Wheaton	033D4
Cook	Englewood	031C4	Cook	Tinley Park	054D3	DuPage	Wheaton	033D6
Cook	Englewood	031C5	Cook	Tinley Park	054D4	Edgar	Brocton	180B3
Cook	Evanston	030C1	Cook	Tinley Park	054D6	Edgar	Chrisman	150C3
Cook	Evanston	030C3	Cook	Wheeling	029B5	Edgar	Grandview	180D3
Cook	Evanston	030C4	Cook	Wheeling	029B6	Edgar	Hume	151D3
Cook	Evanston	030C5	Crawford	Eaton	208D3	Edgar	Paris North	181B3
Cook	Evanston	030C6	Crawford	Flat Rock	211B3	Edgar	Paris South	181C3
Cook	Harvey	055C1	Crawford	Heathsville	211A3	Edgar	Redmon	180A3
Cook	Harvey	055C2	Crawford	Hutsonville	209C3	Edgar	Saint Bernice	181A3
Cook	Harvey	055C3	Crawford	Merom	209D3	Edgar	Sandford	181D3
Cook	Harvey	055C4	Crawford	Stoy	212A3	Edgar	Scotland	150D3
Cook	Harvey	055C5	Cumberland	Greenup	207B3	Edwards	Albion North	239A3
Cook	Harvey	055C6	Cumberland	Hazel Dell	207A3	Edwards	Albion South	239D3
Cook	Highland Park	029A5	Cumberland	Johnstown	185D3	Edwards	Berryville	234C3
Cook	Highland Park	029A6	Cumberland	Neoga	185C3	Edwards	Bone Gap	238B3
Cook	Hinsdale	032C2	Cumberland	Toledo	184C3	Edwards	Grayville	238C3
Cook	Hinsdale	032C4	Cumberland	Union Center	184D3	Edwards	West Salem	233D3
Cook	Hinsdale	032C6	Cumberland	Woodbury	206A3	Effingham	Altamont East	205C3
Cook	Jackson Park	031D1	DeKalb	De Kalb	036A3	Effingham	Dieterich	206C3
Cook	Jackson Park	031D3	DeKalb	Genoa	026C3	Effingham	Eberle	214B3
Cook	Jackson Park	031D5	DeKalb	Hinckley	035C3	Effingham	Edgewood	215B3
Cook	Lake Calumet	055A3	DeKalb	Hinckley	035C6	Effingham	Effingham North	205A3
Cook	Lake Calumet	055A4	DeKalb	Kirkland	025D3	Effingham	Effingham South	205D3
Cook	Lake Calumet	055A5	DeKalb	Shabbona Grove	050A1	Effingham	Hord	215A3
Cook	Lake Calumet	055A6	DeKalb	Shabbona Grove	050A3	Effingham	Shumway	205B3
Cook	Lake Zurich	028A5	DeKalb	Somonauk	051B1	Effingham	Teutopolis	206B3
Cook	Lake Zurich	028A6	DeKalb	Somonauk	051B3	Fayette	Altamont West	204D3
Cook	Mokena	054C2	DeKalb	Somonauk	051B5	Fayette	Avena	204C3
Cook	Palatine	028D1	DeKalb	Somonauk	051B6	Fayette	Beecher City	204A3
Cook	Palatine	028D2	DeKalb	Sycamore	035B3	Fayette	Brownstown	216B3
Cook	Palatine	028D3	DeKalb	Waterman	036D3	Fayette	Hagarstown	217B3
Cook	Palatine	028D4	DeKalb	Waterman	036D5	Fayette	Herrick	204B3
Cook	Palatine	028D5	DeWitt	Clinton	144B3	Fayette	Loogootee	216A3
Cook	Palatine	028D6	DeWitt	Dewitt	144A3	Fayette	Ramsey	203A3
Cook	Palos Park	054A1	DeWitt	Farmer City South	145B3	Fayette	Ramsey Lake	203B3
Cook	Palos Park	054A2	DeWitt	Kenney	143D3	Fayette	Vandalia	217A3
Cook	Palos Park	054A3	DeWitt	Maroa	144C3	Fayette	Vera	203D3
Cook	Palos Park	054A4	DeWitt	Waynesville East	143A3	Fayette	Wildcat Lake	217C3
Cook	Palos Park	054A5	DeWitt	Weldon West	144D3	Ford	Buckley Northwest	114B3
Cook	Palos Park	054A6	Douglas	Arcola	178A3	Ford	Cabery	088B3
Cook	Park Ridge	029D1	Douglas	Arthur	178B3	Ford	Gibson City East	120A3
Cook	Park Ridge	029D2	Douglas	Hindsboro	179B3	Ford	Melvin East	114C3
Cook	Park Ridge	029D3	Douglas	Murdock	152D3	Ford	Melvin West	113D3
Cook	Park Ridge	029D4	Douglas	Newman	151C3	Ford	Paxton	119A3
Cook	Park Ridge	029D5	Douglas	Oakland	179A3	Ford	Perdueville	119B3
Cook	Park Ridge	029D6	Douglas	Tuscola	153D3	Ford	Piper City	088C3
Cook	River Forest	032A1	Douglas	Villa Grove	152C3	Ford	Rankin	118B3
Cook	River Forest	032A2	DuPage	Elmhurst	032B3	Franklin	Akin	262B3
Cook	River Forest	032A3	DuPage	Hinsdale	032C3	Franklin	Christopher	264A3
Cook	River Forest	032A4	DuPage	Lombard	033A3	Franklin	Ewing	255D3
Cook	River Forest	032A5	DuPage	Lombard	033A4	Franklin	Macedonia	256C3
Cook	River Forest	032A6	DuPage	Naperville	033C1	Franklin	Rend Lake Dam	255C3
Cook	Sag Bridge	054B2	DuPage	Naperville	033C2	Franklin	Sesser	254D3
Cook	Sag Bridge	054B3	DuPage	Naperville	033C3	Franklin	Thompsonville	263A3
Cook	Sag Bridge	054B4	DuPage	Naperville	033C4	Franklin	West Frankfort	263B3
Cook	Sag Bridge	054B6	DuPage	Normantown	053B1	Fulton	Banner	107C3
Cook	Steger	056B1	DuPage	Normantown	053B2	Fulton	Bath	139B3
Cook	Steger	056B2	DuPage	Romeoville	053A1	Fulton	Blyton	105D3
Cook	Streamwood	028C1	DuPage	Romeoville	053A2	Fulton	Canton	106D3
Cook	Streamwood	028C2	DuPage	West Chicago	033B1	Fulton	Duck Island	126B3

Appendix A (cont.).

County	Quadrangle	Block	County	Quadrangle	Block	County	Quadrangle	Block
Fulton	Duncan Mills	127C3	Henderson	Stronghurst	103B3	Jersey	Elsah	222A3
Fulton	Fairview	106B3	Henry	Annawan	065B3	Jersey	Jerseyville South	198D3
Fulton	Farmington West	106A3	Henry	Atkinson	066A3	Jersey	Medora	199B3
Fulton	Fiatt	106C3	Henry	Cambridge	066C3	Jersey	Oterville	198C3
Fulton	Havana	127D3	Henry	Galva	075A3	Jo Daviess	Elizabeth	016C3
Fulton	Ipava	128D3	Henry	Geneseo	066B3	Jo Daviess	Elizabeth NE	016A3
Fulton	Lewistown	127B3	Henry	German Corner	066D3	Jo Daviess	Galena	017B3
Fulton	London Mills	105A3	Henry	Hoopole	046C3	Jo Daviess	Green Island	019A1
Fulton	Smithfield	128A3	Henry	Kewanee North	065C3	Jo Daviess	Green Island	019A2
Fulton	St. David	127A3	Henry	Kewanee South	076B3	Jo Daviess	Hanover	017D3
Gallatin	Equality	274A3	Henry	Nekoma	075B3	Jo Daviess	Hanover	017D5
Gallatin	New Haven SW	260C3	Henry	Spring Hill	045D3	Jo Daviess	Hanover	017D6
Gallatin	Ridgway	261D3	Henry	Woodhull	074A3	Jo Daviess	Kent	015C1
Gallatin	Shawneetown	275B3	Iroquois	Beaverville	086B3	Jo Daviess	Kent	015C3
Gallatin	Wabash Island	260D3	Iroquois	Buckley	114D3	Jo Daviess	Menominee	018A3
Greene	Athensville	192B3	Iroquois	Cissna Park	115C3	Jo Daviess	Scales Mound East	016B3
Greene	Boyer Creek	198B3	Iroquois	Claytonville	115D3	Jo Daviess	Scales Mound West	017A3
Greene	Carrollton	193C3	Iroquois	Clifton	087B3	Jo Daviess	Stockton	016D3
Greene	Daum	193D3	Iroquois	Crescent City	087D3	Jo Daviess	Warren	015B3
Greene	Greenfield	192C3	Iroquois	Darrow	116A3	Johnson	Bloomfield	279A3
Greene	Hardin	197A3	Iroquois	Donovan	086A3	Johnson	Creal Springs	272D3
Greene	Jerseyville North	198A3	Iroquois	Gilman	087C3	Johnson	Glendale	278B3
Greene	Kampsville	194D3	Iroquois	L'Erable	087A3	Johnson	Goreville	272C3
Greene	Pearl East	194A3	Iroquois	La Hogue	088D3	Johnson	Karnak	279C3
Greene	Roodhouse East	193A3	Iroquois	Milford	116B1	Johnson	Stonefort	273C3
Greene	Roodhouse West	193B3	Iroquois	Milford	116B3	Johnson	Vienna	279B3
Grundy	Coal City	059D1	Iroquois	Onarga East	115B3	Kane	Aurora North	034D1
Grundy	Coal City	059D3	Iroquois	Onarga West	114A3	Kane	Aurora North	034D2
Grundy	Coal City	059D4	Iroquois	Piper City Northeast	088A3	Kane	Aurora North	034D3
Grundy	Gardner	082A3	Iroquois	Sheldon	086D3	Kane	Aurora North	034D4
Grundy	Lisbon	059B3	Iroquois	Stockland	116D3	Kane	Big Rock	035D3
Grundy	Mazon	082B3	Iroquois	Watseka	086C3	Kane	Elburn	034B3
Grundy	Minooka	059A3	Iroquois	Wellington	116C3	Kane	Elburn	034B6
Grundy	Minooka	059A6	Iroquois	Woodworth	115A3	Kane	Elgin	027D1
Grundy	Morris	059C3	Jackson	Ava	265B3	Kane	Elgin	027D2
Grundy	Stavanger	060A3	Jackson	Carbondale	271B3	Kane	Elgin	027D3
Hamilton	Belle Prairie City	256A3	Jackson	De Soto	264C3	Kane	Elgin	027D4
Hamilton	Broughton	261B3	Jackson	Elkville	264B3	Kane	Geneva	034A2
Hamilton	Bungay	257B3	Jackson	Gorham	270B3	Kane	Geneva	034A3
Hamilton	McLeansboro	256D3	Jackson	Murphysboro	265D3	Kane	Geneva	034A6
Hamilton	Thackeray	257C3	Jackson	Oraville	265C3	Kane	Hampshire	026D3
Hamilton	Walpole	262A3	Jackson	Pomona	270A3	Kane	Maple Park	035A3
Hancock	Bentley	131D3	Jackson	Pomona	270A5	Kane	Pingree Grove	027C2
Hancock	Burnside	102D3	Jackson	Raddle	266D3	Kane	Pingree Grove	027C3
Hancock	Carthage East	131A3	Jackson	Vergennes	265A3	Kane	Plano	051A1
Hancock	Carthage West	131B3	Jackson	Willisville	266A3	Kane	Sugar Grove	034C3
Hancock	Colusa	102C3	Jasper	Latona	214A3	Kane	Sugar Grove	034C4
Hancock	Fountain Green	130B3	Jasper	Newton	213B3	Kankakee	Beecher West	056C6
Hancock	Hamilton	132A3	Jasper	Oblong North	208C3	Kankakee	Bonfield	083A3
Hancock	La Harpe	103C3	Jasper	Oblong South	212B3	Kankakee	Bourbonnais	084B3
Hancock	Niota	101D3	Jasper	Rose Hill	207C3	Kankakee	Bradley	084A3
Hancock	Plymouth	130C3	Jasper	Ste. Marie	213A3	Kankakee	Buckingham	083C3
Hancock	Sutter	132D3	Jasper	Wheeler	206D3	Kankakee	Essex	083B3
Hancock	Warsaw	132C3	Jasper	Yale	207D3	Kankakee	Essex	083B4
Hancock	West Point	131C3	Jefferson	Bluford	241C3	Kankakee	Herscher	083D3
Hardin	Dekoven	275D3	Jefferson	Dahlgren	256B3	Kankakee	Illiana Heights	085A1
Hardin	Karbers Ridge	274D3	Jefferson	Harmony	242A3	Kankakee	Illiana Heights	085A3
Hardin	Rosiclare	277A3	Jefferson	Ina	255B3	Kankakee	Kankakee	084D3
Hardin	Saline Mines	275C3	Jefferson	Kell	242B3	Kankakee	Kankakee	084D5
Henderson	Burlington	100D3	Jefferson	Mt. Vernon	242C3	Kankakee	Leesville	085D3
Henderson	Gladstone	099C3	Jefferson	Opdyke	242D3	Kankakee	Momence	085B3
Henderson	Kirkwood West	099D3	Jefferson	Spring Garden	255A3	Kankakee	Momence	085B6
Henderson	Lomax	102A3	Jefferson	Walnut Hill	243A3	Kankakee	St. Anne	085C3
Henderson	Raritan	103A3	Jefferson	Waltonville	254A3	Kankakee	West Kankakee	084C3
Henderson	Rozetta	099A3	Jefferson	Woodlawn	243D3	Kendall	Aurora South	052A3
Henderson	Seaton	072D3	Jersey	Brighton	199C3	Kendall	Newark	051D3

Appendix A (cont.).

County	Quadrangle	Block	County	Quadrangle	Block	County	Quadrangle	Block
Kendall	Plano	051A3	LaSalle	Long Point	080C3	Logan	Mount Pulaski	142D3
Kendall	Plattville	052C3	LaSalle	Marseilles	060C3	Logan	New Holland	141A3
Kendall	Yorkville	052B3	LaSalle	Marseilles	060C4	Logan	Waynesville West	143B3
Kendall	Yorkville SE	052D3	LaSalle	Marseilles	060C5	McDonough	Adair	128B3
Knox	Appleton	096B2	LaSalle	Marseilles	060C6	McDonough	Bardolph	129A3
Knox	Appleton	096B3	LaSalle	Mendota East	049D3	McDonough	Blandinsville	103D3
Knox	Delong	097D3	LaSalle	Ottawa	061D3	McDonough	Bushnell East	105C3
Knox	Galesburg East	097A3	LaSalle	Prairie Center	061B3	McDonough	Bushnell West	104D3
Knox	Galesburg West	097B2	LaSalle	Ransom	081B2	McDonough	Colchester	130A3
Knox	Maquon	096C3	LaSalle	Ransom	081B3	McDonough	Doddsville	129C3
Knox	Oneida	075C3	LaSalle	Seneca	060D3	McDonough	Fandon	130D3
Knox	Victoria	075D1	LaSalle	Serena	060B3	McDonough	Good Hope	104C3
Knox	Victoria	075D2	LaSalle	Sheridan	051C3	McDonough	Industry	129D3
Knox	Victoria	075D3	LaSalle	Sheridan	051C5	McDonough	Macomb	129B1
Knox	Victoria	075D4	LaSalle	Starved Rock	061C3	McDonough	Macomb	129B3
Knox	Victoria	075D5	LaSalle	Streator North	080A3	McDonough	Macomb	129B4
Knox	Victoria	075D6	LaSalle	Tonica	079A3	McDonough	Macomb	129B5
Knox	Wataga	074D3	LaSalle	Troy Grove	062A3	McDonough	Vermont	128C3
Knox	Williamsfield	096A1	LaSalle	Wedron	061A3	McHenry	Barrington	028B3
Knox	Williamsfield	096A3	Lawrence	Birds	211C3	McHenry	Crystal Lake	027A3
Knox	Yates City	096D3	Lawrence	Chauncey	212D3	McHenry	Fox Lake	008B3
Knox	Yates City	096D6	Lawrence	Lawrenceville	235B3	McHenry	Harvard	010A3
Lake	Antioch	008A2	Lawrence	Russellville	211D3	McHenry	Hebron	009B3
Lake	Antioch	008A3	Lawrence	Sumner	234A3	McHenry	Huntley	027B3
Lake	Antioch	008A4	Lawrence	Vincennes	235A3	McHenry	Marengo North	010D3
Lake	Antioch	008A5	Lee	Amboy	048A3	McHenry	Marengo South	026A3
Lake	Fox Lake	008B2	Lee	Ashton	037C3	McHenry	McHenry	009D3
Lake	Fox Lake	008B4	Lee	Compton	049A3	McHenry	Richmond	009A3
Lake	Fox Lake	008B6	Lee	Dixon East	038C1	McHenry	Wauconda	008C3
Lake	Grayslake	008D2	Lee	Dixon East	038C3	McHenry	Woodstock	009C3
Lake	Grayslake	008D3	Lee	Dixon West	039D3	McLean	Arrowsmith	121B3
Lake	Grayslake	008D5	Lee	Franklin Grove	038D3	McLean	Bellflower	121D3
Lake	Grayslake	008D6	Lee	Harmon	047A3	McLean	Bloomington East	122B1
Lake	Highland Park	029A1	Lee	Harmon	047A6	McLean	Bloomington East	122B3
Lake	Highland Park	029A3	Lee	Lee	036C3	McLean	Bloomington West	123A3
Lake	Highland Park	029A4	Lee	Paw Paw	050B3	McLean	Chenoa	112B3
Lake	Lake Zurich	028A1	Lee	Steward	037D3	McLean	Colfax	112D3
Lake	Lake Zurich	028A2	Lee	Sublette	049B3	McLean	Cooksville	112C3
Lake	Lake Zurich	028A3	Lee	Walton	048B3	McLean	Danvers	110C3
Lake	Libertyville	007C3	Livingston	Blackstone	081C3	McLean	Fairbury	112A3
Lake	Libertyville	007C4	Livingston	Campus	082D3	McLean	Farmer City North	121C3
Lake	Libertyville	007C6	Livingston	Chatsworth North	089D3	McLean	Foosland	120C3
Lake	Wadsworth	007B1	Livingston	Chatsworth South	113A3	McLean	Funks Grove	123D3
Lake	Wadsworth	007B2	Livingston	Cullom	089A3	McLean	Gibson City West	120B3
Lake	Wadsworth	007B3	Livingston	Dwight	082C3	McLean	Gridley	111B3
Lake	Wadsworth	007B4	Livingston	Flanagan North	091A3	McLean	Gridley	111B6
Lake	Wadsworth	007B6	Livingston	Flanagan South	091D3	McLean	Heyworth	122C3
Lake	Wauconda	008C2	Livingston	Forrest North	089C3	McLean	Holder	122A3
Lake	Waukegan	007D1	Livingston	Forrest South	113B3	McLean	Le Roy	122D3
Lake	Waukegan	007D3	Livingston	Northeast Pontiac	090A3	McLean	Lexington	111A3
Lake	Wheeling	029B2	Livingston	Northwest Pontiac	090B3	McLean	McLean	123C2
Lake	Wheeling	029B3	Livingston	Odell	081D3	McLean	McLean	123C3
Lake	Wheeling	029B4	Livingston	Saunemin	089B3	McLean	Merna	111D3
Lake	Zion	007A1	Livingston	Southeast Pontiac	090D3	McLean	Normal East	111C3
Lake	Zion	007A2	Livingston	Southwest Pontiac	090C3	McLean	Normal West	110D3
Lake	Zion	007A3	Livingston	Streator South	080D3	McLean	Saybrook	121A3
Lake	Zion	007A4	Logan	Armington	124D3	McLean	Sibley	113C3
Lake	Zion	007A5	Logan	Broadwell	142C3	McLean	Stanford	123B3
Lake	Zion	007A6	Logan	Chestnut	143C3	Macon	Argenta	155A3
LaSalle	Dana	091B3	Logan	Delavan South	125D3	Macon	Dalton City	176A3
LaSalle	Earlville	050C3	Logan	Emden	124C3	Macon	Decatur	155C2
LaSalle	Kinsman	081A3	Logan	Lake Fork	157A3	Macon	Decatur	155C3
LaSalle	La Salle	062D3	Logan	Lake Fork	157A4	Macon	Forsyth	155B3
LaSalle	La Salle	062D4	Logan	Latham	156B3	Macon	Harristown	156D3
LaSalle	Leland	050D3	Logan	Lincoln East	142A3	Macon	Long Creek	155D3
LaSalle	Leonore	080B3	Logan	Lincoln West	142B3	Macon	Macon East	176B3



Appendix A (cont.).

County	Quadrangle	Block	County	Quadrangle	Block	County	Quadrangle	Block
Macon	Macon West	175A3	Menard	Greenview	141C3	Ogle	Rochelle	037A3
Macon	Warrensburg	156A3	Menard	Middletown	141D3	Ogle	Seward	023A3
Macoupin	Atwater	190C3	Menard	Oakford	140C3	Ogle	Stillman Valley	024C3
Macoupin	Bunker Hill	200C3	Menard	Petersburg	140D3	Peoria	Chillicothe	093B3
Macoupin	Carlinville East	191D3	Menard	Salisbury	159A3	Peoria	Dunlap	094C3
Macoupin	Carlinville West	191C3	Menard	Tallula	159B3	Peoria	Edelstein	094B3
Macoupin	Farmersville	190B3	Mercer	Aledo East	073B3	Peoria	Elmwood	095C3
Macoupin	Gillespie North	200A3	Mercer	Aledo West	072A3	Peoria	Farmington East	107B3
Macoupin	Gillespie South	200D3	Mercer	Blanchard Island	070D3	Peoria	Glasford	107D3
Macoupin	Hettick	192D3	Mercer	Buffalo Prairie	069D3	Peoria	Hanna City	107A3
Macoupin	Litchfield	201B3	Mercer	Eliza	069C3	Peoria	Laura	095B3
Macoupin	Mount Olive	201C3	Mercer	Joy	072B3	Peoria	Oak Hill	095D2
Macoupin	Palmyra	191B3	Mercer	Matherville	068D3	Peoria	Oak Hill	095D3
Macoupin	Plainview	200B3	Mercer	New Windsor	074B3	Peoria	Pekin	108C2
Macoupin	Scottville	192A3	Mercer	Orion	067C3	Peoria	Pekin	108C3
Macoupin	Shipman	199D3	Mercer	Reynolds	068C3	Peoria	Peoria East	108A1
Macoupin	Summerville	199A3	Mercer	Toolesboro	071A3	Peoria	Peoria East	108A3
Macoupin	Virden South	191A3	Mercer	Toolesboro	071A4	Peoria	Peoria West	108B3
Madison	Alton	221B3	Mercer	Viola	073A3	Peoria	Princeville	095A3
Madison	Bethalto	221A3	Monroe	Ames	250A3	Peoria	Rome	094A3
Madison	Collinsville	226B3	Monroe	Columbia	247B3	Peoria	Spring Bay	094D3
Madison	Edwardsville	220C3	Monroe	Paderborn	247D3	Peoria	Spring Bay	094D5
Madison	Granite City	225B3	Monroe	Renault	250B3	Perry	Du Quoin	254C3
Madison	Grantfork	219C3	Monroe	Selma	249A3	Perry	Pinckneyville	253C3
Madison	Highland	227B3	Monroe	Valmeyer	248D3	Perry	Pyatts	253D3
Madison	Marine	220D3	Monroe	Waterloo	247C3	Perry	Tamaroa	254B3
Madison	Monks Mound	225A3	Montgomery	Bald Knob	202A3	Perry	Todds Mill	253A3
Madison	New Douglas	219B3	Montgomery	Butler	201A3	Perry	Winkle	253B3
Madison	Prairietown	220B3	Montgomery	Coffeen	202C3	Piatt	Atwood	153C3
Madison	St. Jacob	226A3	Montgomery	Fillmore	202D1	Piatt	Bement	154A3
Madison	Wood River	221D3	Montgomery	Fillmore	202D3	Piatt	Cerro Gordo	154B3
Madison	Worden	220A3	Montgomery	Hillsboro	202B3	Piatt	Hammond	154D3
Marion	Centralia East	229D3	Montgomery	Nokomis	189D3	Piatt	Ivesdale	153B3
Marion	Fairman	229A3	Montgomery	Nokomis SW	189C3	Piatt	La Place	154C3
Marion	Iuka	230D3	Montgomery	Ohlman	188C3	Piatt	Mahomet	146B3
Marion	Kinmundy	216D3	Montgomery	Raymond	190D3	Piatt	Mahomet	146B5
Marion	Omega	230A3	Montgomery	Raymond NE	190A3	Piatt	Mansfield	145A3
Marion	Orchardville	231C3	Montgomery	Sorento North	201D3	Piatt	Monticello	145D3
Marion	Patoka	217D3	Morgan	Alexander	171A3	Piatt	Seymour	146C3
Marion	Salem North	230B3	Morgan	Chapin	161C3	Piatt	Weldon East	145C3
Marion	Salem South	230C3	Morgan	Concord	161D3	Pike	Barry	167A3
Marion	St. Paul	216C3	Morgan	Franklin	171D3	Pike	Baylis	168B3
Marion	Xenia	231B3	Morgan	Jacksonville	171B3	Pike	Bedford	169D3
Marshall	Henry	078D3	Morgan	Literberry	160C3	Pike	Bedford	169D5
Marshall	La Prairie Center	077D3	Morgan	Lynnville	170A3	Pike	Griggsville	169B3
Marshall	La Rose	092B3	Morgan	Nortonville	171C3	Pike	Hull	167B3
Marshall	Lacon	078C3	Morgan	Prentice	160D3	Pike	Meredosia	162D3
Marshall	Minonk	092A3	Morgan	Waverly	172C3	Pike	Milton	169C3
Marshall	Varna	079C3	Moultrie	Cadwell	177A3	Pike	Milton	169C5
Marshall	Washburn	093A3	Moultrie	Kirksville	177C3	Pike	New Salem	168A3
Marshall	Wenona	079D3	Moultrie	Lovington	177B3	Pike	Pearl West	194B3
Mason	Biggs	140B3	Moultrie	Sullivan	177D3	Pike	Perry East	162C3
Mason	Chandlerville	139C3	Ogle	Chana	037B3	Pike	Pittsfield	168D3
Mason	Duck Island	126B4	Ogle	Creston	036B3	Pike	Pleasant Hill East	195A3
Mason	Easton	140A3	Ogle	Daysville	038A3	Pike	Pleasant Hill West	195B3
Mason	Forest City	126D3	Ogle	Daysville	038A5	Pike	Rockport	167D3
Mason	Kilbourne	139A3	Ogle	Fairdale	025C3	Pike	Summer Hill	168C3
Mason	Mason City	141B3	Ogle	Forreston North	022A3	Pope	Brownfield	278D3
Mason	Natrona	125C3	Ogle	Forreston South	022D3	Pope	Eddyville	273D3
Mason	Topeka	126C3	Ogle	German Valley	023B3	Pope	Golconda	277C3
Massac	Joppa	285A3	Ogle	Grand Detour	038B3	Pope	Herod	274C3
Massac	Mermet	279D3	Ogle	Kings	024D3	Pope	Little Cypress	287C3
Massac	Metropolis	286B3	Ogle	Kishwaukee	024B3	Pope	Shetlerville	277B3
Massac	Paducah NE	286A3	Ogle	Mt. Morris	023C3	Pope	Smithland	287B3
Massac	Reevesville	278C3	Ogle	Oregon	023D3	Pope	Waltersburg	278A3
Menard	Athens	158B3	Ogle	Polo	039A3	Pulaski	Cypress	280D3

Appendix A (cont.).

County	Quadrangle	Block	County	Quadrangle	Block	County	Quadrangle	Block
Pulaski	Olmsted	284A3	Schuyler	Astoria	138A3	Vermilion	Danville SW	149C1
Pulaski	Pulaski	284B3	Schuyler	Beardstown	138C3	Vermilion	Danville SW	149C3
Putnam	Florid	078A3	Schuyler	Camden	136A3	Vermilion	East Lynn	118A3
Putnam	McNabb	079B3	Schuyler	Erwin	137B3	Vermilion	Georgetown	150B3
Putnam	Spring Valley	062C3	Schuyler	Ray	138B3	Vermilion	Georgetown	150B4
Randolph	Baldwin	251A3	Schuyler	Rushville North	137A3	Vermilion	Henning	117C3
Randolph	Chester	267A3	Schuyler	Rushville South	137D3	Vermilion	Hoopeston	117B3
Randolph	Coulterville	252A3	Scott	Alsey	170C3	Vermilion	Humrick	150A3
Randolph	Evansville	251C3	Scott	Florence	169A3	Vermilion	Oakwood	148D3
Randolph	Kaskaskia	267B3	Scott	Manchester	170D3	Vermilion	Potomac	118D3
Randolph	Percy	252D3	Scott	Winchester	170B3	Vermilion	Sidell	151A3
Randolph	Prairie Du Rocher	250D3	Shelby	Fancher	187D3	Wabash	East Mount Carmel	237B3
Randolph	Red Bud	251B3	Shelby	Findlay	176D3	Wabash	Keensburg	238D3
Randolph	Rockwood	266C3	Shelby	Lakewood	187C3	Wabash	Lancaster	234D3
Randolph	Steeleville	252C3	Shelby	Middlesworth	186B3	Wabash	Mount Carmel	238A3
Randolph	Tilden	252B3	Shelby	Obed	176C3	Wabash	St. Francisville	235C3
Randolph	Walsh	251D3	Shelby	Oconee	188D3	Warren	Abingdon	097C3
Randolph	Welge	266B3	Shelby	Shelbyville	187A3	Warren	Alexis	073D3
Richland	Claremont	234B3	Shelby	Stewardson East	186D3	Warren	Avon	105B3
Richland	Dundas	213D3	Shelby	Stewardson West	186C3	Warren	Berwick	098D3
Richland	Landes	212C3	Shelby	Tower Hill	187B3	Warren	Cameron	098A3
Richland	Noble	233B3	Shelby	Windsor	186A3	Warren	Cameron	098A4
Richland	Olney	233A3	Stark	Bradford	077B3	Warren	Galesburg West	097B3
Richland	Wakefield	213C3	Stark	Castleton	077C3	Warren	Greenbush	104A3
Rock Island	Andalusia	068B3	Stark	Elmira	076A3	Warren	Kirkwood East	098C3
Rock Island	Coal Valley	067B3	Stark	La Fayette	076C3	Warren	Little York	073C3
Rock Island	Cordova	044A3	Stark	Wyoming	076D3	Warren	Monmouth	098B3
Rock Island	Erie Northwest	045B5	Stephenson	Dakota	014A3	Warren	North Henderson	074C3
Rock Island	Hillsdale	045C3	Stephenson	Davis	013B3	Warren	Roseville	104B3
Rock Island	Illinois City	069B3	Stephenson	Freeport East	014D3	Washington	Addieville	244B3
Rock Island	Milan	068A3	Stephenson	Freeport West	014C3	Washington	Ashley	243C3
Rock Island	Montpelier	069A3	Stephenson	Kent	015C4	Washington	Beaucoup	244D3
Rock Island	Port Byron	044D3	Stephenson	Lena	015A3	Washington	Hoyleton	244A3
St. Clair	Cahokia	225C3	Stephenson	Orangeville	014B3	Washington	Irvington	243B3
St. Clair	Freeburg	246B3	Stephenson	Pearl City	015D3	Washington	Nashville	244C3
St. Clair	French Village	225D3	Stephenson	Ridott	013C3	Washington	Oakdale	245D3
St. Clair	Lebanon	226D3	Tazewell	Delavan North	125A3	Washington	Okawville	245A3
St. Clair	Mascoutah	246A3	Tazewell	Eureka	109A3	Wayne	Albion NW	239B3
St. Clair	Millstadt	247A3	Tazewell	Hopedale	124B3	Wayne	Boyleston	240C3
St. Clair	Millstadt	247A5	Tazewell	Hopedale	124B4	Wayne	Burnt Prairie	240D3
St. Clair	New Athens East	246D3	Tazewell	Mackinaw	109D3	Wayne	Cisne	232C3
St. Clair	New Athens West	246C3	Tazewell	Manito	126A3	Wayne	Crisp	241A3
St. Clair	O'Fallon	226C3	Tazewell	Marquette Heights	108D3	Wayne	Enterprise	232D3
St. Clair	St. Libory	245C3	Tazewell	Minier	124A3	Wayne	Fairfield	240A3
St. Clair	Trenton	227C3	Tazewell	Morton	109C3	Wayne	Geff	240B3
St. Clair	Venedy	245B3	Tazewell	South Pekin	125B3	Wayne	Golden Gate	239C3
Saline	Eldorado	261C3	Tazewell	Washington	109B3	Wayne	Johnsonville	231D3
Saline	Galatia	262D3	Union	Anna	280B3	Wayne	Mount Erie	233C3
Saline	Harrisburg	273A3	Union	Cobden	270D3	Wayne	Wayne City	241D3
Saline	Rudement	274B3	Union	Jonesboro	281A3	White	Carmi	258C3
Sangamon	Chatham	173B3	Union	Lick Creek	271D3	White	Centerville	258B3
Sangamon	Cornland	157B3	Union	Makanda	271C3	White	Crossville	258A3
Sangamon	Divernon	173C3	Union	Mt. Pleasant	280A3	White	Emma	260A3
Sangamon	Edinburg	174B3	Union	Wolf Lake	270C3	White	Enfield	257D3
Sangamon	Farmingdale	159D3	Vermilion	Ambia	117A3	White	Maunie	258D3
Sangamon	Loami	172A3	Vermilion	Bismarck	117D1	White	New Harmony	259B3
Sangamon	Mechanicsburg	157C3	Vermilion	Bismarck	117D3	White	New Haven	260B3
Sangamon	Mt. Auburn	157D3	Vermilion	Collison	148A3	White	Norris City	261A3
Sangamon	New Berlin	172B3	Vermilion	Danville NE	149A3	White	Solitude	259C3
Sangamon	New City	173A3	Vermilion	Danville NE	149A5	White	Springerton	257A3
Sangamon	Pawnee	173D3	Vermilion	Danville NW	149B2	Whiteside	Clinton	041C3
Sangamon	Pleasant Plains	159C3	Vermilion	Danville NW	149B3	Whiteside	Como	040D3
Sangamon	Springfield East	158D3	Vermilion	Danville NW	149B4	Whiteside	Erie	045A3
Sangamon	Springfield West	158C3	Vermilion	Danville SE	149D3	Whiteside	Erie Northwest	045B3
Sangamon	Viriden North	172D3	Vermilion	Danville SE	149D5	Whiteside	Hahnaman	047B3
Sangamon	Williamsville	158A3	Vermilion	Danville SE	149D6	Whiteside	Morrison	040C2

Appendix A (cont.).

County	Quadrangle	Block	County	Quadrangle	Block	County	Quadrangle	Block
Whiteside	Morrison	040C3	Will	Mokena	054C4	Winnebago	Caledonia	011C3
Whiteside	Prophetstown	046B1	Will	Mokena	054C5	Winnebago	Cherry Valley	025B3
Whiteside	Sterling	039C3	Will	Mokena	054C6	Winnebago	Durand	013A2
Whiteside	Tampico	046A3	Will	Normantown	053B3	Winnebago	Durand	013A3
Whiteside	Union Grove	041D3	Will	Normantown	053B6	Winnebago	Durand	013A6
Will	Beecher East	056D1	Will	Peotone	057D3	Winnebago	Kishwaukee	024B1
Will	Beecher East	056D2	Will	Plainfield	053C1	Winnebago	Kishwaukee	024B4
Will	Beecher East	056D3	Will	Plainfield	053C2	Winnebago	Pecatonica	013D1
Will	Beecher West	056C1	Will	Plainfield	053C3	Winnebago	Pecatonica	013D2
Will	Beecher West	056C2	Will	Plainfield	053C4	Winnebago	Pecatonica	013D3
Will	Beecher West	056C3	Will	Romeoville	053A3	Winnebago	Rockford North	012D1
Will	Bonfield	083A1	Will	Romeoville	053A4	Winnebago	Rockford North	012D3
Will	Bonfield	083A2	Will	Romeoville	053A5	Winnebago	Rockford North	012D4
Will	Channahon	058B3	Will	Romeoville	053A6	Winnebago	Rockford North	012D6
Will	Channahon	058B5	Will	Steger	056B3	Winnebago	Rockford South	024A3
Will	Channahon	058B6	Will	Steger	056B4	Winnebago	Rockford South	024A4
Will	Dyer	056A3	Will	Symerton	058D1	Winnebago	Shirland	012B1
Will	Dyer	056A4	Will	Symerton	058D3	Winnebago	Shirland	012B3
Will	Dyer	056A5	Will	Wilmington	058C1	Winnebago	Shirland	012B4
Will	Dyer	056A6	Will	Wilmington	058C2	Winnebago	Shirland	012B5
Will	Elwood	058A1	Will	Wilmington	058C3	Winnebago	South Beloit	012A3
Will	Elwood	058A3	Will	Wilmington	058C5	Winnebago	South Beloit	012A4
Will	Elwood	058A6	Will	Wilton Center	057C1	Winnebago	South Beloit	012A6
Will	Essex	083B1	Will	Wilton Center	057C3	Winnebago	Winnebago	012C1
Will	Frankfort	057A2	Williamson	Carrier Mills	273B3	Winnebago	Winnebago	012C3
Will	Frankfort	057A3	Williamson	Crab Orchard	272A3	Winnebago	Winnebago	012C4
Will	Frankfort	057A4	Williamson	Crab Orchard Lake	271A3	Woodford	Benson	092D3
Will	Frankfort	057A6	Williamson	Harco	262C3	Woodford	El Paso	110A3
Will	Joliet	053D3	Williamson	Herrin	264D3	Woodford	Flanagan Southwest	091C3
Will	Joliet	053D4	Williamson	Johnston City	263C3	Woodford	Germantown Hills	093C3
Will	Joliet	053D5	Williamson	Marion	272B3	Woodford	Metamora	093D3
Will	Joliet	053D6	Williamson	Pittsburg	263D3	Woodford	Roanoke	092C3
Will	Manhattan	057B3	Winnebago	Belvidere NW	011B3	Woodford	Secor	110B3
Will	Mokena	054C3	Winnebago	Caledonia	011C1			

**Appendix B. Summary of atlas data by block. The 7.5-minute quadrangle name, county name, number of species by breeding category, and number of observer hours are given for each sampled block. The columns list the number of species Confirmed (CO), Probable (PR), Possible (PO), and Observed (OB), and the total with breeding evidence (i.e., the sum of Confirmed, Probable, and Possible) (TBE). Codes for priority blocks end in "3".**

Block	Quad	County	CO	PR	PO	OB	TBE	Hrs	Block	Quad	County	CO	PR	PO	OB	TBE	Hrs
007A1	Zion	Lake	15	5	4	0	24	63.0	013D2	Pecatonica	Winnebago	42	17	21	2	80	33.0
007A2	Zion	Lake	25	23	7	2	55	145.0	013D3	Pecatonica	Winnebago	47	21	12	8	80	75.0
007A3	Zion	Lake	60	11	13	3	84	135.3	014A3	Dakota	Stephenson	30	11	20	0	61	39.0
007A4	Zion	Lake	4	10	0	1	14	20.0	014B3	Orangeville	Stephenson	39	13	25	1	77	34.9
007A5	Zion	Lake	40	26	2	5	68	50.0	014C3	Freeport West	Stephenson	34	8	26	0	68	44.3
007A6	Zion	Lake	51	17	4	13	72	90.0	014D3	Freeport East	Stephenson	35	12	15	0	62	40.0
007B1	Wadsworth	Lake	20	20	4	2	44	30.0	015A3	Lena	Stephenson	38	12	21	1	71	48.2
007B2	Wadsworth	Lake	7	20	29	1	56	20.0	015B3	Warren	Jo Daviess	33	25	8	1	66	44.5
007B3	Wadsworth	Lake	59	11	11	5	81	92.3	015C1	Kent	Jo Daviess	0	0	0	1	0	1.0
007B4	Wadsworth	Lake	40	19	8	15	67	84.0	015C3	Kent	Jo Daviess	47	24	11	3	82	70.0
007B6	Wadsworth	Lake	14	11	0	10	25	20.0	015C4	Kent	Stephenson	0	0	0	1	0	1.0
007C3	Libertyville	Lake	58	11	10	6	79	89.8	015D3	Pearl City	Stephenson	37	17	15	1	69	53.0
007C4	Libertyville	Lake	32	15	4	2	51	60.0	016A3	Elizabeth NE	Jo Daviess	37	11	21	2	69	47.5
007C6	Libertyville	Lake	28	25	1	6	54	33.0	016B3	Scales Mound E.	Jo Daviess	36	26	9	1	71	39.5
007D1	Waukegan	Lake	15	0	0	0	15	7.0	016C3	Elizabeth	Jo Daviess	43	16	20	4	79	37.5
007D3	Waukegan	Lake	54	14	4	15	72	64.0	016D3	Stockton	Jo Daviess	37	24	10	2	71	54.5
008A2	Antioch	Lake	36	33	4	5	73	50.0	017A3	Scales Mound W.	Jo Daviess	37	17	14	1	68	36.0
008A3	Antioch	Lake	60	14	6	7	80	121.8	017B3	Galena	Jo Daviess	41	22	14	1	77	49.0
008A4	Antioch	Lake	32	4	15	6	51	22.0	017D3	Hanover	Jo Daviess	35	23	18	3	76	40.0
008A5	Antioch	Lake	27	15	4	16	46	65.0	017D5	Hanover	Jo Daviess	0	1	1	0	2	1.0
008B2	Fox Lake	Lake	28	46	6	5	80	104.0	017D6	Hanover	Jo Daviess	0	0	1	0	1	1.0
008B3	Fox Lake	McHenry	59	12	11	0	82	23.0	018A3	Menominee	Jo Daviess	35	6	19	3	60	46.0
008B4	Fox Lake	Lake	11	25	24	3	60	47.0	019A1	Green Island	Jo Daviess	0	1	0	0	1	1.0
008B6	Fox Lake	Lake	21	24	8	3	53	50.0	019A2	Green Island	Jo Daviess	1	0	1	1	2	1.0
008C2	Wauconda	Lake	37	24	4	3	65	80.0	020A3	Pleasant Valley	Carroll	29	11	20	4	60	8.0
008C3	Wauconda	McHenry	48	28	6	3	82	70.0	020B3	Blackhawk	Carroll	56	17	14	3	87	17.0
008D2	Grayslake	Lake	26	29	1	5	56	40.0	020B4	Blackhawk	Carroll	1	0	0	0	1	0.5
008D3	Grayslake	Lake	61	10	10	8	81	149.5	020D3	Wacker	Carroll	29	15	45	3	89	12.0
008D5	Grayslake	Lake	19	25	11	6	55	30.0	021A3	Boone Branch	Carroll	20	21	19	2	60	18.0
008D6	Grayslake	Lake	34	12	8	3	54	29.0	021B3	Loran	Carroll	25	12	21	2	58	20.0
009A3	Richmond	McHenry	38	18	9	4	65	23.5	021C3	Mount Carroll	Carroll	30	5	29	1	64	9.0
009B3	Hebron	McHenry	31	13	7	7	51	13.5	021D3	Lanark	Carroll	29	7	18	1	54	8.0
009C3	Woodstock	McHenry	52	13	7	2	72	49.0	022A3	Forreston North	Ogle	27	22	16	1	65	20.5
009D3	McHenry	McHenry	43	14	10	3	67	73.3	022B3	Shannon	Carroll	27	8	15	1	50	8.0
010A3	Harvard	McHenry	28	13	9	6	50	24.0	022C3	Brookville	Carroll	14	14	27	0	55	12.0
010B3	Capron	Boone	8	11	14	5	33	8.0	022D3	Forreston South	Ogle	26	13	18	0	57	39.0
010C3	Garden Prairie	Boone	8	13	18	4	39	12.0	023A3	Seward	Ogle	43	20	10	2	73	38.8
010D3	Marengo North	McHenry	34	21	6	6	61	32.5	023B3	German Valley	Ogle	36	20	23	4	79	35.0
011A3	Belvidere NE	Boone	10	25	19	4	54	13.0	023C3	Mt. Morris	Ogle	30	15	18	0	63	25.0
011B3	Belvidere NW	Winnebago	42	20	23	2	85	76.5	023D3	Oregon	Ogle	37	9	21	1	67	36.3
011C1	Caledonia	Winnebago	54	15	11	7	80	56.0	024A3	Rockford South	Winnebago	41	24	19	2	84	117.0
011C3	Caledonia	Winnebago	39	24	7	5	70	37.5	024A4	Rockford South	Winnebago	42	15	24	3	81	28.0
011C6	Caledonia	Boone	24	29	17	4	70	168.0	024B1	Kishwaukee	Winnebago	64	7	6	6	77	48.5
011D3	Belvidere North	Boone	10	11	20	5	41	13.0	024B3	Kishwaukee	Ogle	31	22	29	1	82	32.8
012A3	South Beloit	Winnebago	47	22	6	7	75	72.0	024B4	Kishwaukee	Winnebago	1	0	0	0	1	1.0
012A4	South Beloit	Winnebago	12	24	16	1	52	21.0	024C3	Stillman Valley	Ogle	15	19	27	2	61	20.0
012A6	South Beloit	Winnebago	30	29	15	4	74	18.0	024D3	Kings	Ogle	16	13	25	4	54	17.0
012B1	Shirland	Winnebago	46	10	32	10	88	55.0	025A3	Belvidere South	Boone	10	11	13	9	34	12.0
012B3	Shirland	Winnebago	53	30	19	1	102	88.0	025B3	Cherry Valley	Winnebago	72	23	9	7	104	200.0
012B4	Shirland	Winnebago	19	36	24	1	79	30.0	025C3	Fairdale	Ogle	14	12	14	2	40	18.0
012B5	Shirland	Winnebago	30	27	11	0	68	83.5	025D3	Kirkland	DeKalb	28	11	7	1	46	37.3
012C1	Winnebago	Winnebago	9	16	0	10	25	0.0	026A3	Marengo South	McHenry	36	14	15	3	65	93.0
012C3	Winnebago	Winnebago	31	18	5	6	54	35.0	026B3	Riley	Boone	10	14	18	6	42	9.0
012C4	Winnebago	Winnebago	15	19	13	3	47	16.0	026C3	Genoa	DeKalb	47	17	10	1	74	48.8
012D1	Rockford North	Winnebago	36	13	15	1	64	47.0	026D3	Hampshire	Kane	55	7	17	2	79	228.6
012D3	Rockford North	Winnebago	54	14	5	4	73	44.5	027A3	Crystal Lake	McHenry	57	11	10	1	78	10.0
012D4	Rockford North	Winnebago	18	1	0	0	19	8.0	027B3	Huntley	McHenry	54	12	5	0	71	14.0
012D6	Rockford North	Winnebago	11	5	2	2	18	15.0	027C2	Pingree Grove	Kane	63	14	11	2	88	98.8
013A2	Durand	Winnebago	7	22	18	1	47	10.5	027C3	Pingree Grove	Kane	57	6	9	1	72	207.8
013A3	Durand	Winnebago	32	22	4	4	58	49.5	027D1	Elgin	Kane	42	25	3	5	70	30.0
013A6	Durand	Winnebago	44	15	1	2	60	28.0	027D2	Elgin	Kane	56	16	4	5	76	75.0
013B3	Davis	Stephenson	32	9	16	0	57	50.5	027D3	Elgin	Kane	55	11	14	1	80	81.0
013C3	Ridott	Stephenson	43	13	17	1	73	58.5	027D4	Elgin	Kane	61	9	5	6	75	55.0
013D1	Pecatonica	Winnebago	6	1	0	0	7	3.0	028A1	Lake Zurich	Lake	10	19	0	4	29	20.0

Appendix B (cont.).

Block	Quad	County	CO	PR	PO	OB	TBE	Hrs	Block	Quad	County	CO	PR	PO	OB	TBE	Hrs
028A2	Lake Zurich	Lake	20	15	5	6	40	25.0	032B6	Elmhurst	Cook	18	6	5	4	29	18.0
028A6	Lake Zurich	Cook	4	11	17	2	32	7.5	032C2	Hinsdale	Cook	36	5	15	5	56	53.0
028B3	Barrington	McHenry	38	17	10	1	65	26.0	032C3	Hinsdale	DuPage	38	5	7	7	50	38.0
028B5	Barrington	Cook	32	26	22	1	80	188.8	032C4	Hinsdale	Cook	41	17	14	1	72	99.5
028B6	Barrington	Cook	7	21	20	0	48	44.2	032C6	Hinsdale	Cook	25	12	14	2	51	22.0
028C1	Streamwood	Cook	41	20	17	3	78	130.5	032D1	Berwyn	Cook	29	19	11	8	59	42.5
028C2	Streamwood	Cook	54	22	21	10	97	240.5	032D2	Berwyn	Cook	7	9	22	3	38	29.0
028C3	Streamwood	Cook	42	17	15	1	74	74.0	032D3	Berwyn	Cook	34	8	10	13	52	41.0
028C4	Streamwood	Cook	13	19	21	3	53	44.0	032D4	Berwyn	Cook	31	14	7	4	52	40.0
028C5	Streamwood	Cook	35	26	1	0	62	48.0	032D5	Berwyn	Cook	20	15	19	3	54	32.0
028C6	Streamwood	Cook	15	8	14	3	37	112.0	032D6	Berwyn	Cook	2	2	24	0	28	4.5
028D1	Palatine	Cook	14	12	16	3	42	11.0	033A3	Lombard	DuPage	27	7	6	1	40	37.0
028D2	Palatine	Cook	1	3	7	0	11	2.0	033A4	Lombard	DuPage	38	6	15	4	59	16.0
028D3	Palatine	Cook	22	13	18	4	53	30.0	033B1	West Chicago	DuPage	51	14	18	1	83	60.0
028D4	Palatine	Cook	15	3	23	1	41	5.0	033B3	West Chicago	DuPage	34	5	12	3	51	55.0
028D5	Palatine	Cook	14	10	11	1	35	2.0	033B5	West Chicago	DuPage	1	0	1	0	2	12.0
028D6	Palatine	Cook	31	19	12	6	62	85.0	033B6	West Chicago	DuPage	60	14	11	16	85	151.5
029A1	Highland Park	Lake	17	12	0	0	29	43.5	033C1	Naperville	DuPage	69	14	14	10	97	248.0
029A3	Highland Park	Lake	45	21	5	7	71	63.3	033C2	Naperville	DuPage	54	10	8	3	72	37.0
029A4	Highland Park	Lake	23	15	8	3	46	20.0	033C3	Naperville	DuPage	37	9	18	7	64	18.0
029A5	Highland Park	Cook	4	12	16	1	32	17.3	033C4	Naperville	DuPage	53	15	19	2	87	131.0
029A6	Highland Park	Cook	49	9	10	1	68	147.0	033D1	Wheaton	DuPage	1	0	1	0	2	44.0
029B2	Wheeling	Lake	28	12	10	1	50	30.0	033D3	Wheaton	DuPage	75	3	12	7	90	290.0
029B3	Wheeling	Lake	54	9	9	2	72	65.0	033D4	Wheaton	DuPage	69	12	8	12	89	290.0
029B4	Wheeling	Lake	51	14	8	3	73	150.0	033D6	Wheaton	DuPage	2	0	0	0	2	21.5
029B5	Wheeling	Cook	43	7	4	8	54	172.2	034A2	Geneva	Kane	44	12	17	0	73	20.5
029B6	Wheeling	Cook	49	12	7	7	68	107.0	034A3	Geneva	Kane	34	33	3	1	70	47.0
029C1	Arlington Heights	Cook	4	7	21	2	32	5.0	034A6	Geneva	Kane	13	3	3	0	19	2.0
029C2	Arlington Heights	Cook	33	22	16	1	71	0.0	034B3	Elburn	Kane	44	13	7	3	64	24.0
029C3	Arlington Heights	Cook	20	0	12	11	32	8.0	034B6	Elburn	Kane	27	18	9	2	54	15.0
029C4	Arlington Heights	Cook	43	13	10	5	66	56.3	034C3	Sugar Grove	Kane	43	12	14	0	69	56.9
029C5	Arlington Heights	Cook	26	8	17	2	51	23.0	034C4	Sugar Grove	Kane	25	20	15	6	60	30.0
029C6	Arlington Heights	Cook	19	8	8	2	35	18.0	034D1	Aurora North	Kane	36	11	13	6	60	30.5
029D1	Park Ridge	Cook	10	10	16	1	36	20.0	034D2	Aurora North	Kane	38	19	8	7	65	79.0
029D2	Park Ridge	Cook	40	13	18	7	71	56.5	034D3	Aurora North	Kane	43	12	15	6	70	51.3
029D3	Park Ridge	Cook	38	10	16	7	64	63.0	034D4	Aurora North	Kane	24	18	9	3	51	81.0
029D4	Park Ridge	Cook	11	4	17	1	32	8.3	035A3	Maple Park	Kane	43	12	6	1	61	56.5
029D5	Park Ridge	Cook	12	3	1	6	16	12.0	035B3	Sycamore	DeKalb	23	7	23	7	53	13.0
029D6	Park Ridge	Cook	26	15	13	5	54	38.5	035C3	Hinckley	DeKalb	17	17	12	1	46	20.0
030C1	Evanston	Cook	27	7	3	8	37	36.2	035C6	Hinckley	DeKalb	2	0	0	0	2	1.0
030C3	Evanston	Cook	40	8	6	7	54	113.5	035D3	Big Rock	Kane	43	8	12	1	63	56.3
030C4	Evanston	Cook	25	8	11	0	44	26.0	036A3	De Kalb	DeKalb	13	10	23	1	46	13.5
030C5	Evanston	Cook	33	9	9	12	51	59.3	036B3	Creston	Ogle	19	13	8	7	40	32.5
030C6	Evanston	Cook	24	11	5	2	40	52.3	036C3	Lee	Lee	26	12	9	6	47	27.0
031A5	Chicago Loop East	Cook	17	5	11	5	33	113.3	036D3	Waterman	DeKalb	11	5	19	2	35	11.5
031B1	Chicago Loop	Cook	33	14	10	10	57	155.0	036D5	Waterman	DeKalb	30	12	13	1	55	20.0
031B2	Chicago Loop	Cook	28	14	9	6	51	58.5	037A3	Rochelle	Ogle	24	15	9	5	48	40.5
031B3	Chicago Loop	Cook	16	11	7	3	34	26.0	037B3	Chana	Ogle	28	20	11	5	59	55.0
031B4	Chicago Loop	Cook	20	3	5	3	28	20.0	037C3	Ashton	Lee	7	15	11	1	33	6.0
031B5	Chicago Loop	Cook	17	10	16	3	43	8.0	037D3	Steward	Lee	9	12	6	2	27	13.0
031B6	Chicago Loop	Cook	10	8	15	1	33	42.8	038A3	Daysville	Ogle	36	18	19	5	73	41.5
031C1	Englewood	Cook	14	6	11	1	31	7.0	038A5	Daysville	Ogle	50	20	4	11	74	153.5
031C2	Englewood	Cook	12	8	10	8	30	91.0	038B3	Grand Detour	Ogle	34	10	21	2	65	10.8
031C3	Englewood	Cook	21	10	11	1	42	21.0	038C1	Dixon East	Lee	14	0	1	41	15	5.0
031C4	Englewood	Cook	9	4	5	1	18	3.0	038C3	Dixon East	Lee	41	13	19	6	73	22.0
031C5	Englewood	Cook	0	0	16	0	16	3.0	038D3	Franklin Grove	Lee	7	18	14	2	39	8.0
031D1	Jackson Park	Cook	21	6	10	13	37	347.8	039A3	Polo	Ogle	27	8	19	0	54	25.5
031D3	Jackson Park	Cook	23	5	12	2	40	18.0	039B3	Hazelhurst	Carroll	21	9	20	2	50	12.0
031D5	Jackson Park	Cook	22	12	16	2	50	436.0	039C3	Sterling	Whiteside	11	23	13	18	47	25.0
032A1	River Forest	Cook	18	21	12	2	51	25.0	039D3	Dixon West	Lee	22	10	31	11	63	20.0
032A2	River Forest	Cook	26	10	7	1	43	99.0	040A3	Milledgeville	Carroll	23	17	21	1	61	6.0
032A3	River Forest	Cook	44	10	15	2	69	84.0	040B3	Fairhaven	Carroll	26	10	24	3	60	6.3
032A4	River Forest	Cook	19	10	4	6	33	89.0	040C2	Morrison	Whiteside	1	0	0	0	1	2.0
032A5	River Forest	Cook	31	15	10	9	56	308.5	040C3	Morrison	Whiteside	51	17	1	2	69	18.5
032A6	River Forest	Cook	21	9	8	8	38	79.0	040D3	Como	Whiteside	8	12	12	0	32	10.0
032B2	Elmhurst	Cook	5	15	18	4	38	6.0	041A3	Thomson	Carroll	32	18	19	3	69	6.0
032B3	Elmhurst	DuPage	41	7	14	5	62	48.0	041C3	Clinton	Whiteside	15	14	24	2	53	7.0

Appendix B (cont.).

Block	Quad	County	CO	PR	PO	OB	TBE	Hrs	Block	Quad	County	CO	PR	PO	OB	TBE	Hrs
041D3	Union Grove	Whiteside	13	20	27	3	60	12.0	054B2	Sag Bridge	Cook	79	5	3	8	87	400.0
044A3	Cordova	Rock Island	31	23	10	2	64	27.0	054B3	Sag Bridge	Cook	52	10	17	1	79	172.0
044D3	Port Byron	Rock Island	28	23	21	6	72	43.5	054B4	Sag Bridge	Cook	39	25	19	9	83	277.0
045A3	Erie	Whiteside	48	13	3	2	64	19.0	054B6	Sag Bridge	Cook	27	13	30	6	70	123.3
045B3	Erie Northwest	Whiteside	25	17	12	9	54	19.0	054C2	Mokena	Cook	2	19	22	1	43	2.0
045B5	Erie Northwest	Rock Island	47	22	13	16	82	0.0	054C3	Mokena	Will	59	24	8	5	91	86.5
045C3	Hillsdale	Rock Island	16	29	19	2	64	15.0	054C4	Mokena	Will	1	20	16	0	37	15.0
045D3	Spring Hill	Henry	24	11	26	1	61	13.0	054C5	Mokena	Will	0	0	1	0	1	1.0
046A3	Tampico	Whiteside	13	12	24	1	49	7.5	054C6	Mokena	Will	4	4	3	0	11	56.0
046B1	Prophetstown	Whiteside	1	0	0	0	1	1.0	054D1	Tinley Park	Cook	19	10	21	4	50	25.0
046C3	Hooppole	Henry	8	6	32	1	46	7.0	054D2	Tinley Park	Cook	18	10	14	2	42	11.5
046D3	Yorktown	Bureau	20	14	16	0	50	28.5	054D3	Tinley Park	Cook	40	12	22	4	74	68.0
047A3	Harmon	Lee	27	9	19	9	55	22.0	054D4	Tinley Park	Cook	30	18	25	5	73	61.0
047A6	Harmon	Lee	46	25	18	19	89	0.0	054D6	Tinley Park	Cook	36	18	10	7	64	77.8
047B3	Hahnaman	Whiteside	20	16	18	2	54	12.5	055A3	Lake Calumet	Cook	37	9	33	9	79	129.0
047C3	New Bedford	Bureau	20	25	16	1	61	29.0	055A4	Lake Calumet	Cook	23	10	38	3	71	57.0
047D3	Walnut	Bureau	17	22	20	2	59	24.0	055A5	Lake Calumet	Cook	36	19	7	15	62	81.3
048A3	Amboy	Lee	35	21	12	1	68	5.0	055A6	Lake Calumet	Cook	34	13	24	5	71	115.6
048B3	Walton	Lee	16	25	15	4	56	25.0	055B1	Blue Island	Cook	3	1	11	0	15	7.0
048C3	Ohio	Bureau	36	11	12	5	59	43.5	055B2	Blue Island	Cook	11	0	0	0	11	7.0
048D3	La Moille	Bureau	34	15	5	6	54	27.0	055B3	Blue Island	Cook	20	23	14	7	57	36.0
049A3	Compton	Lee	28	9	15	14	52	30.0	055B4	Blue Island	Cook	6	2	14	1	22	7.0
049B3	Sublette	Lee	30	19	8	2	57	5.0	055B6	Blue Island	Cook	33	12	25	1	70	61.8
049C3	Mendota West	Bureau	13	22	19	0	54	13.5	055C1	Harvey	Cook	17	17	22	3	56	88.5
049D3	Mendota East	LaSalle	12	27	12	7	51	15.5	055C2	Harvey	Cook	2	5	20	1	27	11.0
050A1	Shabbona Grove	DeKalb	21	7	6	2	34	10.0	055C3	Harvey	Cook	18	20	11	5	49	29.0
050A3	Shabbona Grove	DeKalb	34	17	18	2	69	15.5	055C4	Harvey	Cook	21	13	9	1	43	19.0
050B3	Paw Paw	Lee	24	7	27	12	58	15.0	055C5	Harvey	Cook	33	28	7	5	68	80.0
050C3	Earlville	LaSalle	10	10	8	7	28	16.0	055C6	Harvey	Cook	31	22	3	3	56	55.0
050D3	Leland	LaSalle	30	22	11	3	63	43.5	055D1	Calumet City	Cook	29	18	18	9	65	140.0
051A1	Plano	Kane	4	1	2	2	7	10.0	055D2	Calumet City	Cook	2	6	10	0	18	6.0
051A3	Plano	Kendall	37	11	6	1	54	13.1	055D3	Calumet City	Cook	37	24	12	2	73	56.0
051B1	Somonauk	DeKalb	1	0	0	0	1	0.0	055D4	Calumet City	Cook	37	12	3	21	52	188.0
051B3	Somonauk	DeKalb	24	15	17	5	56	26.0	055D5	Calumet City	Cook	12	5	12	1	29	3.0
051B5	Somonauk	DeKalb	9	12	8	3	29	5.0	056A1	Dyer	Cook	12	10	8	0	30	2.0
051B6	Somonauk	DeKalb	43	14	10	4	67	35.0	056A2	Dyer	Cook	15	22	28	2	65	44.0
051C3	Sheridan	LaSalle	30	17	12	1	59	42.0	056A3	Dyer	Will	62	20	7	2	89	273.0
051C5	Sheridan	LaSalle	3	0	0	0	3	5.0	056A4	Dyer	Will	1	0	0	0	1	2.0
051D3	Newark	Kendall	26	14	20	1	60	31.0	056A5	Dyer	Will	3	3	10	1	16	46.0
052A3	Aurora South	Kendall	18	6	18	29	42	37.0	056A6	Dyer	Will	16	36	18	4	70	45.0
052B3	Yorkville	Kendall	39	13	21	4	73	69.2	056B1	Steger	Cook	14	8	11	0	33	9.0
052C3	Plattville	Kendall	16	7	10	3	33	32.0	056B2	Steger	Cook	6	22	13	0	41	12.0
052D3	Yorkville SE	Kendall	16	13	10	4	39	22.0	056B3	Steger	Will	65	24	7	4	96	123.0
053A1	Romeoville	DuPage	49	12	10	7	71	38.0	056B4	Steger	Will	1	3	0	0	4	11.0
053A2	Romeoville	DuPage	2	0	0	0	2	2.0	056C1	Beecher West	Will	12	25	15	4	52	39.0
053A3	Romeoville	Will	11	12	15	2	38	20.0	056C2	Beecher West	Will	16	26	18	3	60	42.0
053A4	Romeoville	Will	25	1	2	0	28	2.0	056C3	Beecher West	Will	28	16	6	1	50	18.5
053A5	Romeoville	Will	0	1	2	0	3	3.0	056C6	Beecher West	Kankakee	2	2	21	0	25	3.0
053A6	Romeoville	Will	21	19	8	2	48	31.5	056D1	Beecher East	Will	0	1	0	0	1	2.0
053B1	Normantown	DuPage	49	12	7	5	68	21.0	056D2	Beecher East	Will	10	35	11	2	56	21.0
053B2	Normantown	DuPage	0	1	2	0	3	16.0	056D3	Beecher East	Will	39	16	11	1	66	33.5
053B3	Normantown	Will	12	21	8	5	41	19.5	057A2	Frankfort	Will	15	7	6	0	28	3.0
053B6	Normantown	Will	3	0	0	1	3	2.0	057A3	Frankfort	Will	27	10	3	5	40	58.0
053C1	Plainfield	Will	7	2	2	2	11	154.0	057A4	Frankfort	Will	6	1	2	0	9	10.0
053C2	Plainfield	Will	1	1	0	0	2	20.0	057A6	Frankfort	Will	3	20	9	0	32	5.0
053C3	Plainfield	Will	35	18	16	2	69	95.8	057B3	Manhattan	Will	33	6	8	6	47	66.0
053C4	Plainfield	Will	13	9	2	2	24	46.0	057C1	Wilton Center	Will	3	2	3	1	8	5.0
053D3	Joliet	Will	68	21	12	4	101	124.5	057C3	Wilton Center	Will	29	25	9	2	63	21.5
053D4	Joliet	Will	1	0	0	0	1	3.0	057D3	Peotone	Will	17	13	10	0	40	44.0
053D5	Joliet	Will	0	0	5	1	5	25.0	058A1	Elwood	Will	6	0	1	3	7	10.0
053D6	Joliet	Will	8	7	2	0	17	58.5	058A3	Elwood	Will	28	11	12	2	51	49.0
054A1	Palos Park	Cook	31	14	17	8	62	148.3	058A6	Elwood	Will	0	2	2	0	4	1.0
054A2	Palos Park	Cook	13	3	3	8	19	36.0	058B3	Channahon	Will	27	26	15	2	68	59.5
054A3	Palos Park	Cook	58	17	15	10	90	122.0	058B5	Channahon	Will	20	13	4	2	37	23.0
054A4	Palos Park	Cook	17	2	6	9	25	70.0	058B6	Channahon	Will	7	3	6	0	16	3.0
054A5	Palos Park	Cook	51	13	22	7	86	69.5	058C1	Wilmington	Will	14	5	4	1	23	22.0
054A6	Palos Park	Cook	24	23	27	4	74	39.5	058C2	Wilmington	Will	3	1	3	0	7	2.0

Appendix B (cont.).

Block	Quad	County	CO	PR	PO	OB	TBE	Hrs
058C3	Wilmington	Will	41	23	9	1	73	25.5
058C5	Wilmington	Will	9	2	3	0	14	87.0
058D1	Symerton	Will	1	2	6	0	9	1.0
058D3	Symerton	Will	21	17	14	5	52	75.0
059A3	Minooka	Grundy	26	14	22	2	62	31.7
059A6	Minooka	Grundy	2	2	3	0	7	5.0
059B3	Lisbon	Grundy	24	12	11	2	47	26.3
059C3	Morris	Grundy	41	9	13	2	63	16.0
059D1	Coal City	Grundy	1	1	2	0	4	5.0
059D3	Coal City	Grundy	20	24	16	2	60	24.4
059D4	Coal City	Grundy	0	0	1	0	1	5.0
060A3	Stavanger	Grundy	23	7	9	0	39	21.5
060B3	Serena	LaSalle	24	17	22	0	63	16.5
060C3	Marseilles	LaSalle	28	22	26	2	76	45.5
060C4	Marseilles	LaSalle	2	0	0	0	2	3.0
060C5	Marseilles	LaSalle	0	3	0	0	3	3.0
060C6	Marseilles	LaSalle	0	1	1	0	2	1.5
060D3	Seneca	LaSalle	40	26	19	2	85	38.5
061A3	Wedron	LaSalle	5	14	30	8	49	20.0
061B3	Prairie Center	LaSalle	14	8	5	0	27	19.3
061C3	Starved Rock	LaSalle	38	26	29	3	93	43.0
061D3	Ottawa	LaSalle	25	20	16	1	61	22.2
062A3	Troy Grove	LaSalle	16	17	27	3	60	16.7
062B3	Ladd	Bureau	14	21	9	0	44	9.0
062C3	Spring Valley	Putnam	36	17	24	1	77	31.5
062D3	La Salle	LaSalle	51	6	16	8	73	44.0
062D4	La Salle	LaSalle	9	25	7	1	41	12.5
063A3	Malden	Bureau	14	12	17	16	43	27.0
063B3	Princeton North	Bureau	14	16	31	3	61	37.5
063C3	Princeton South	Bureau	27	24	23	1	74	30.0
063D3	Depue	Bureau	17	16	38	3	71	41.0
064A3	Buda Northeast	Bureau	13	19	14	2	46	18.0
064B3	Manlius	Bureau	12	25	12	1	49	21.8
064C3	Buda	Bureau	7	18	28	7	53	30.0
064D3	Wyanet	Bureau	9	16	27	4	52	26.0
065A3	Mineral	Bureau	12	23	26	0	61	15.3
065B3	Annawan	Henry	29	15	15	0	59	22.0
065C3	Kewanee North	Henry	8	14	25	1	47	9.3
065D3	Neponset	Bureau	16	12	27	4	55	23.5
066A3	Atkinson	Henry	26	18	14	0	58	14.8
066B3	Geneseo	Henry	14	7	31	0	52	3.3
066C3	Cambridge	Henry	15	4	25	0	44	6.8
066D3	German Corner	Henry	21	13	18	1	52	17.0
067B3	Coal Valley	Rock Island	23	15	27	6	65	22.5
067C3	Orion	Mercer	20	22	26	3	68	9.0
068A3	Milan	Rock Island	16	32	19	1	67	14.0
068B3	Andalusia	Rock Island	31	44	13	8	88	306.0
068C3	Reynolds	Mercer	23	29	5	1	57	20.3
068D3	Matherville	Mercer	16	14	27	0	57	12.2
069A3	Montpelier	Rock Island	31	37	17	5	85	50.8
069B3	Illinois City	Rock Island	10	37	11	2	58	4.0
069C3	Eliza	Mercer	35	24	8	10	67	18.0
069D3	Buffalo Prairie	Mercer	19	18	30	2	67	13.3
070D3	Blanchard Island	Mercer	14	8	27	2	49	7.0
071A3	Toolesboro	Mercer	12	13	19	4	44	6.0
071A4	Toolesboro	Mercer	1	1	3	2	5	1.5
072A3	Aledo West	Mercer	17	16	25	4	58	17.1
072B3	Joy	Mercer	24	15	26	1	65	22.1
072D3	Seaton	Henderson	8	18	20	1	46	6.0
073A3	Viola	Mercer	21	13	29	2	63	16.5
073B3	Aledo East	Mercer	32	17	20	0	69	30.0
073C3	Little York	Warren	11	22	28	2	61	15.0
073D3	Alexis	Warren	9	19	19	0	47	12.0
074A3	Woodhull	Henry	22	15	11	0	48	14.0
074B3	New Windsor	Mercer	21	19	24	0	64	14.1
074C3	North Henderson	Warren	14	31	11	0	56	11.5
074D3	Wataga	Knox	10	28	18	1	56	9.5

Block	Quad	County	CO	PR	PO	OB	TBE	Hrs
075A3	Galva	Henry	12	3	18	0	33	1.0
075B3	Nekoma	Henry	18	10	15	0	43	18.5
075C3	Oneida	Knox	12	22	17	0	51	8.5
075D1	Victoria	Knox	0	1	0	0	1	0.0
075D2	Victoria	Knox	1	0	0	0	1	0.0
075D3	Victoria	Knox	21	44	15	1	80	31.5
075D4	Victoria	Knox	0	0	2	0	2	0.0
075D5	Victoria	Knox	1	0	0	0	1	0.0
075D6	Victoria	Knox	0	1	0	0	1	0.0
076A3	Elmira	Stark	30	19	11	1	60	21.5
076B3	Kewanee South	Henry	16	1	17	0	34	1.0
076C3	La Fayette	Stark	30	15	11	5	56	26.5
076D3	Wyoming	Stark	30	17	15	2	62	20.5
077A3	Whitefield	Bureau	45	6	3	9	54	77.5
077B3	Bradford	Stark	33	12	14	3	59	22.0
077C3	Castleton	Stark	22	6	12	1	40	18.0
077D3	La Prairie Center	Marshall	22	11	8	2	41	17.5
078A3	Florid	Putnam	28	9	19	6	56	22.5
078B3	Putnam	Bureau	10	14	36	1	60	32.0
078C3	Lacon	Marshall	33	22	13	3	68	21.5
078D3	Henry	Marshall	47	7	15	8	69	40.0
079A3	Tonica	LaSalle	23	13	17	8	53	28.0
079B3	McNabb	Putnam	19	14	24	0	57	14.3
079C3	Varna	Marshall	20	16	12	2	48	15.0
079D3	Wenona	Marshall	27	13	7	0	47	17.5
080A3	Streator North	LaSalle	10	2	41	2	53	21.0
080B3	Leonore	LaSalle	29	9	11	6	49	24.0
080C3	Long Point	LaSalle	24	6	12	8	42	20.0
080D3	Streator South	Livingston	10	12	13	0	35	3.5
081A3	Kinsman	LaSalle	9	3	10	1	22	1.5
081B2	Ransom	LaSalle	7	6	8	2	21	10.0
081B3	Ransom	LaSalle	9	11	16	6	36	25.0
081C3	Blackstone	Livingston	20	7	18	3	45	29.5
081D3	Odell	Livingston	15	4	7	14	26	31.3
082A3	Gardner	Grundy	20	14	11	2	45	10.0
082B3	Mazon	Grundy	28	15	17	0	60	13.0
082C3	Dwight	Livingston	11	5	15	3	31	34.5
082D3	Campus	Livingston	14	10	9	7	33	11.8
083A1	Bonfield	Will	13	8	5	2	26	29.0
083A2	Bonfield	Will	3	2	3	0	8	10.0
083A3	Bonfield	Kankakee	32	23	8	0	63	31.0
083B1	Essex	Will	20	10	12	7	42	84.0
083B3	Essex	Kankakee	37	25	9	4	71	27.5
083B4	Essex	Kankakee	2	0	1	0	3	16.0
083C3	Buckingham	Kankakee	20	13	4	1	37	15.2
083D3	Herscher	Kankakee	28	8	3	1	39	15.3
084A3	Bradley	Kankakee	26	8	17	4	51	118.8
084B3	Bourbonnais	Kankakee	38	23	11	5	72	75.8
084C3	West Kankakee	Kankakee	27	16	9	4	52	32.3
084D3	Kankakee	Kankakee	23	22	26	1	71	43.7
084D5	Kankakee	Kankakee	11	6	0	2	17	33.0
085A1	Illiana Heights	Kankakee	0	0	3	0	3	1.0
085A3	Illiana Heights	Kankakee	42	21	11	8	74	59.0
085B3	Momence	Kankakee	32	6	14	0	52	42.0
085B6	Momence	Kankakee	40	10	9	7	59	30.0
085C3	St. Anne	Kankakee	26	12	11	7	49	77.3
085D3	Leesville	Kankakee	37	16	13	6	66	235.3
086A3	Donovan	Iroquois	28	20	9	1	57	18.3
086B3	Beaverville	Iroquois	27	6	11	0	44	19.8
086C3	Watseka	Iroquois	43	17	17	1	77	33.5
086D3	Sheldon	Iroquois	17	20	22	0	59	10.0
087A3	L'Erable	Iroquois	31	26	8	0	65	19.4
087B3	Clifton	Iroquois	22	13	12	0	47	17.8
087C3	Gilman	Iroquois	24	13	7	1	44	22.2
087D3	Crescent City	Iroquois	31	20	19	2	70	26.5
088A3	Piper City NE	Iroquois	20	11	3	0	34	15.0
088B3	Cabery	Ford	15	18	9	0	42	14.0



Appendix B (cont.).

Block	Quad	County	CO	PR	PO	OB	TBE	Hrs	Block	Quad	County	CO	PR	PO	OB	TBE	Hrs
088C3	Piper City	Ford	17	13	7	2	37	7.0	105C3	Bushnell East	McDonough	24	15	20	1	59	17.5
088D3	La Hogue	Iroquois	16	12	3	0	31	15.3	105D3	Blyton	Fulton	23	18	18	4	59	34.0
089A3	Cullom	Livingston	7	7	13	0	27	2.2	106A3	Farmington West	Fulton	27	10	24	10	61	91.0
089B3	Saunemin	Livingston	9	1	10	0	20	16.3	106B3	Fairview	Fulton	29	20	10	2	59	20.0
089C3	Forrest North	Livingston	11	10	12	0	33	20.3	106C3	Fiatt	Fulton	17	22	15	2	54	20.0
089D3	Chatsworth North	Livingston	24	6	8	19	38	31.3	106D3	Canton	Fulton	26	22	17	1	65	44.5
090A3	Northeast Pontiac	Livingston	18	14	20	1	52	42.3	107A3	Hanna City	Peoria	11	27	10	22	48	46.0
090B3	Northwest Pontiac	Livingston	19	12	10	19	41	60.3	107B3	Farmington East	Peoria	12	22	9	0	43	18.0
090C3	Southwest Pontiac	Livingston	6	3	21	1	30	22.5	107C3	Banner	Fulton	39	20	10	15	69	85.0
090D3	Southeast Pontiac	Livingston	9	3	12	0	24	18.0	107D3	Glasford	Peoria	36	10	17	8	63	64.0
091A3	Flanagan North	Livingston	17	10	10	3	37	24.3	108A1	Peoria East	Peoria	1	0	0	0	1	1.0
091B3	Dana	LaSalle	11	8	21	3	40	26.0	108A3	Peoria East	Peoria	17	8	12	17	37	70.0
091C3	Flanagan SW	Woodford	23	14	4	2	41	20.0	108B3	Peoria West	Peoria	18	17	14	11	49	37.0
091D3	Flanagan South	Livingston	12	4	9	0	25	2.6	108C2	Pekin	Peoria	5	0	1	0	6	5.0
092A3	Minonk	Marshall	24	7	4	1	35	17.5	108C3	Pekin	Peoria	37	14	25	3	76	68.5
092B3	La Rose	Marshall	45	15	4	1	64	54.5	108D3	Marquette Heights	Tazewell	23	8	27	2	58	12.0
092C3	Roanoke	Woodford	43	7	5	1	55	61.0	109A3	Eureka	Tazewell	25	7	5	4	37	33.5
092D3	Benson	Woodford	8	17	2	0	27	17.0	109B3	Washington	Tazewell	45	17	2	8	64	27.0
093A3	Washburn	Marshall	41	24	4	6	69	36.5	109C3	Morton	Tazewell	17	6	10	1	33	15.0
093B3	Chillicothe	Peoria	47	14	15	3	76	50.0	109D3	Mackinaw	Tazewell	49	13	12	2	74	43.0
093C3	Germantown Hills	Woodford	38	21	5	4	64	43.0	110A3	El Paso	Woodford	50	7	2	5	59	32.5
093D3	Metamora	Woodford	42	9	16	7	67	75.0	110B3	Secor	Woodford	55	10	6	6	71	36.0
094A3	Rome	Peoria	54	6	8	15	68	34.0	110C3	Danvers	McLean	33	11	11	0	55	22.5
094B3	Edelstein	Peoria	2	15	16	10	33	20.0	110D3	Normal West	McLean	21	11	6	5	38	26.0
094C3	Dunlap	Peoria	50	16	6	2	72	34.0	111A3	Lexington	McLean	40	5	5	1	50	58.0
094D3	Spring Bay	Peoria	42	17	8	5	67	35.0	111B3	Gridley	McLean	36	20	7	1	63	23.0
094D5	Spring Bay	Peoria	28	20	9	8	57	200.0	111B6	Gridley	McLean	65	16	6	4	87	780.0
095A3	Princeville	Peoria	28	19	10	16	57	48.0	111C3	Normal East	McLean	30	5	6	10	41	81.0
095B3	Laura	Peoria	34	30	10	15	74	66.0	111D3	Merna	McLean	38	13	7	0	58	32.0
095C3	Elmwood	Peoria	15	17	11	2	43	18.0	112A3	Fairbury	McLean	34	4	2	2	40	47.0
095D2	Oak Hill	Peoria	0	0	1	0	1	1.0	112B3	Chenoo	McLean	31	6	8	2	45	27.5
095D3	Oak Hill	Peoria	28	19	21	10	68	73.0	112C3	Cooksville	McLean	35	21	2	1	58	37.0
096A1	Williamsfield	Knox	5	8	5	0	18	0.0	112D3	Colfax	McLean	60	1	3	0	64	32.0
096A3	Williamsfield	Knox	18	47	19	1	84	27.0	113A3	Chatsworth South	Livingston	33	12	6	2	51	135.9
096B2	Appleton	Knox	4	0	1	0	5	0.0	113B3	Forrest South	Livingston	15	3	3	2	21	24.3
096B3	Appleton	Knox	17	34	23	2	74	17.0	113C3	Sibley	McLean	43	0	0	2	43	15.0
096C3	Maquon	Knox	20	25	17	1	62	18.5	113D3	Melvin West	Ford	28	14	13	0	55	18.0
096D3	Yates City	Knox	15	36	15	0	66	11.5	114A3	Onarga West	Iroquois*	20	14	16	1	50	11.0
096D6	Yates City	Knox	0	1	0	0	1	0.0	114B3	Buckley NW	Ford	31	16	9	0	56	11.6
097A3	Galesburg East	Knox	29	31	11	1	71	26.3	114C3	Melvin East	Ford	27	6	10	2	43	12.3
097B2	Galesburg West	Knox	1	0	0	0	1	0.0	114D3	Buckley	Iroquois	23	20	11	1	54	12.0
097B3	Galesburg West	Warren	30	25	15	1	70	39.0	115A3	Woodworth	Iroquois	15	21	9	1	45	18.0
097C3	Abingdon	Warren	17	33	19	1	69	28.8	115B3	Onarga East	Iroquois	36	25	8	1	69	24.4
097D3	Delong	Knox	27	28	16	1	71	26.5	115C3	Cissna Park	Iroquois	12	18	7	0	37	9.0
098A3	Cameron	Warren	34	24	5	4	63	36.5	115D3	Claytonville	Iroquois	27	23	12	2	62	23.0
098A4	Cameron	Warren	25	30	11	1	66	14.5	116A3	Darrow	Iroquois	24	14	10	1	48	15.1
098B3	Monmouth	Warren	16	23	11	0	50	8.5	116B1	Milford	Iroquois	0	0	1	0	1	1.0
098C3	Kirkwood East	Warren	13	23	8	1	44	12.5	116B3	Milford	Iroquois	38	21	14	2	73	31.9
098D3	Berwick	Warren	18	28	5	0	51	12.5	116C3	Wellington	Iroquois	27	14	15	2	56	23.0
099A3	Rozetta	Henderson	10	30	11	1	51	7.0	116D3	Stockland	Iroquois	9	8	11	22	28	36.0
099C3	Gladstone	Henderson	14	24	32	4	70	15.3	117A3	Ambia	Vermilion	38	5	6	3	49	54.5
099D3	Kirkwood West	Henderson	13	22	18	1	53	12.5	117B3	Hoopeston	Vermilion	37	8	6	5	51	45.8
100D3	Burlington	Henderson	10	25	23	4	58	20.0	117C3	Henning	Vermilion	32	7	7	5	46	44.5
101D3	Nota	Hancock	45	20	11	3	76	59.5	117D1	Bismarck	Vermilion	1	0	0	0	1	1.0
102A3	Lomax	Henderson	13	14	37	2	64	48.0	117D3	Bismarck	Vermilion	60	5	4	3	69	69.5
102C3	Colusa	Hancock	36	4	8	1	48	21.1	118A3	East Lynn	Vermilion	26	6	7	2	39	41.5
102D3	Burnside	Hancock	49	6	8	0	63	30.0	118B3	Rankin	Ford	25	7	9	1	41	13.7
103A3	Raritan	Henderson	26	18	17	1	61	12.3	118B5	Rankin	Champaign	40	24	12	2	76	30.8
103B3	Stronghurst	Henderson	17	17	34	3	68	36.3	118C1	Penfield	Champaign	45	11	22	2	78	35.0
103C3	La Harpe	Hancock	46	8	12	4	66	25.5	118C3	Penfield	Champaign	41	21	17	1	79	55.0
103D3	Blandinsville	McDonough	29	16	21	3	66	32.5	118D3	Potomac	Vermilion	65	7	7	3	79	70.0
104A3	Greenbush	Warren	18	28	16	1	62	9.0	119A3	Paxton	Ford	35	12	21	2	68	33.5
104B3	Roseville	Warren	24	10	12	0	46	24.5	119B3	Perdueville	Ford	23	12	11	0	46	15.5
104C3	Good Hope	McDonough	24	24	7	3	55	41.0	119C3	Rantoul	Champaign	25	7	13	0	45	9.0
104D3	Bushnell West	McDonough	28	19	9	13	56	132.5	119D3	Gifford	Champaign	24	12	17	1	53	17.0
105A3	London Mills	Fulton	20	19	4	18	43	57.5	120A3	Gibson City East	Ford	34	22	9	1	65	20.5
105B3	Avon	Warren	21	24	17	0	62	17.0	120B3	Gibson City West	McLean	39	5	2	4	46	21.0

Appendix B (cont.).

Block	Quad	County	CO	PR	PO	OB	TBE	Hrs	Block	Quad	County	CO	PR	PO	OB	TBE	Hrs
120C3	Foosland	McLean	43	1	2	1	46	21.0	136D3	Lake Mt. Sterling	Brown	21	31	6	1	58	6.0
120D3	Fisher	Champaign	39	17	19	3	75	30.0	137A3	Rushville North	Schuyler	31	4	25	2	60	49.0
121A3	Saybrook	McLean	68	4	4	0	76	32.0	137B3	Erwin	Schuyler	39	8	17	1	64	80.0
121B3	Arrowsmith	McLean	32	11	4	2	47	28.0	137C3	Ripley	Brown	26	38	6	1	70	7.5
121C3	Farmer City North	McLean	32	13	9	5	54	24.0	137D3	Rushville South	Schuyler	35	13	18	2	66	45.0
121D3	Bellflower	McLean	46	0	2	0	48	21.0	138A3	Astoria	Schuyler	17	23	14	5	54	34.0
122A3	Holder	McLean	67	4	4	0	75	31.0	138B3	Ray	Schuyler	13	12	31	1	56	35.0
122B1	Bloomington East	McLean	26	8	5	1	39	60.0	138C3	Beardstown	Schuyler	15	6	39	2	60	25.8
122B3	Bloomington East	McLean	57	8	4	1	69	38.0	138D3	Clear Lake	Cass	18	21	15	4	54	6.8
122C3	Heyworth	McLean	62	6	4	0	72	51.0	139A3	Kilbourne	Mason	18	19	27	2	64	25.0
122D3	Le Roy	McLean	22	4	0	2	26	26.5	139B3	Bath	Fulton	24	23	15	4	62	16.0
123A3	Bloomington West	McLean	37	10	8	1	55	47.5	139C3	Chandlerville	Mason	27	13	29	4	69	22.0
123B3	Stanford	McLean	40	13	3	1	56	40.0	139D3	Newmansville	Cass	13	24	33	1	70	13.5
123C2	McLean	McLean	34	10	19	4	63	31.0	140A3	Easton	Mason	38	20	6	2	64	26.0
123C3	McLean	McLean	35	17	3	2	55	27.8	140B3	Biggs	Mason	42	11	10	1	63	25.5
123D3	Funks Grove	McLean	30	14	3	2	47	27.0	140C3	Oakford	Menard	14	26	9	1	49	10.5
124A3	Minier	Tazewell	10	15	10	0	35	11.5	140D3	Petersburg	Menard	9	21	28	1	58	8.0
124B3	Hopedale	Tazewell	38	23	16	1	77	27.0	141A3	New Holland	Logan	4	7	18	0	29	6.0
124B4	Hopedale	Tazewell	30	33	5	0	68	33.0	141B3	Mason City	Mason	14	19	14	2	47	12.0
124C3	Emden	Logan	6	1	27	0	34	9.0	141C3	Greenview	Menard	46	15	9	4	70	35.5
124D3	Armington	Logan	6	23	22	1	51	10.0	141D3	Middletown	Menard	40	14	11	2	65	20.5
125A3	Delavan North	Tazewell	39	22	9	2	70	130.5	142A3	Lincoln East	Logan	5	12	20	0	37	7.0
125B3	South Pekin	Tazewell	10	18	26	5	54	35.0	142B3	Lincoln West	Logan	13	11	27	2	51	10.0
125C3	Natrona	Mason	17	23	1	1	41	12.0	142C3	Broadwell	Logan	20	13	18	3	51	8.5
125D3	Delavan South	Logan	3	6	25	0	34	6.0	142D3	Mount Pulaski	Logan	16	21	22	0	59	7.8
126A3	Manito	Tazewell	31	30	11	6	72	44.0	143A3	Waynesville East	DeWitt	14	13	10	1	37	10.0
126B3	Duck Island	Fulton	11	31	11	33	53	51.5	143B3	Waynesville West	Logan	4	10	13	0	27	9.0
126B4	Duck Island	Mason	1	6	0	1	7	1.0	143C3	Chestnut	Logan	20	14	20	0	54	8.0
126C3	Topeka	Mason	31	18	11	2	60	26.5	143D3	Kenney	DeWitt	14	9	6	1	29	16.0
126D3	Forest City	Mason	33	14	7	3	54	31.0	144A3	Dewitt	DeWitt	43	26	15	0	84	58.0
127A3	St. David	Fulton	9	20	18	20	47	54.0	144B3	Clinton	DeWitt	21	14	7	1	42	14.0
127B3	Lewistown	Fulton	31	12	12	1	55	16.0	144C3	Maroa	DeWitt	15	13	13	2	41	13.0
127C3	Duncan Mills	Fulton	31	14	12	1	57	16.0	144D3	Weldon West	DeWitt	17	11	6	1	34	23.0
127D3	Havana	Fulton	23	29	15	6	67	44.0	145A3	Mansfield	Piatt	15	6	8	2	29	12.5
128A3	Smithfield	Fulton	24	24	6	3	54	22.0	145B3	Farmer City South	DeWitt	33	31	10	1	74	42.5
128B3	Adair	McDonough	22	15	16	1	53	21.0	145C3	Weldon East	Piatt	12	6	15	2	33	13.0
128C3	Vermont	McDonough	35	9	20	6	64	120.5	145D3	Monticello	Piatt	26	30	20	0	76	40.0
128D3	Ipava	Fulton	32	22	6	1	60	22.0	146A3	Rising	Champaign	36	17	10	0	63	30.0
129A3	Bardolph	McDonough	20	19	13	4	52	47.8	146B2	Mahomet	Champaign	1	0	0	0	1	2.0
129B1	Macomb	McDonough	38	16	14	8	68	38.0	146B3	Mahomet	Piatt	15	17	25	4	57	20.0
129B3	Macomb	McDonough	26	14	20	5	60	32.0	146B5	Mahomet	Piatt	1	0	0	0	1	1.0
129B4	Macomb	McDonough	8	2	0	0	10	10.0	146C3	Seymour	Piatt	13	15	12	0	40	10.0
129B5	Macomb	McDonough	1	0	0	0	1	2.0	146D2	Bondville	Champaign	1	0	0	0	1	1.0
129C3	Doddsville	McDonough	37	10	15	14	62	36.0	146D3	Bondville	Champaign	21	9	6	0	36	17.0
129D3	Industry	McDonough	31	13	12	7	56	66.5	146D5	Bondville	Champaign	1	0	0	0	1	1.0
130A3	Colchester	McDonough	42	11	13	7	66	214.0	147A3	Flatville	Champaign	22	13	9	1	44	13.5
130B3	Fountain Green	Hancock	52	12	19	1	83	15.0	147B3	Thomasboro	Champaign	30	12	16	2	58	15.5
130C3	Plymouth	Hancock	44	7	27	3	78	19.5	147B5	Thomasboro	Champaign	3	0	0	0	3	1.5
130D3	Fandon	McDonough	43	6	12	18	61	50.0	147C1	Urbana	Champaign	1	0	0	0	1	1.0
131A3	Carthage East	Hancock	50	7	17	3	74	54.5	147C3	Urbana	Champaign	39	19	11	0	69	34.0
131B3	Carthage West	Hancock	34	6	12	0	52	21.5	147D3	St. Joseph	Champaign	39	14	9	1	62	24.0
131C3	West Point	Hancock	47	4	28	3	79	21.0	148A3	Collison	Vermilion	35	5	4	8	44	45.0
131D3	Bentley	Hancock	44	6	11	1	61	32.0	148B3	Royal	Champaign	25	5	20	0	50	19.5
132A3	Hamilton	Hancock	46	10	12	11	68	37.0	148C3	Homer	Champaign	45	24	15	2	84	61.5
132C3	Warsaw	Hancock	39	8	16	5	63	28.0	148D3	Oakwood	Vermilion	73	4	11	11	88	126.0
132D3	Sutter	Hancock	37	12	18	3	67	37.5	149A3	Danville NE	Vermilion	54	17	3	6	74	106.0
134A3	Tioga	Adams	36	27	13	6	76	91.0	149A5	Danville NE	Vermilion	1	0	0	0	1	1.0
134B3	Lima	Adams	27	12	13	5	52	73.0	149B2	Danville NW	Vermilion	1	0	0	0	1	1.0
134C3	Long Island	Adams	31	9	41	9	81	23.0	149B3	Danville NW	Vermilion	107	1	3	6	111	247.0
134D3	Mendon	Adams	24	27	8	4	59	45.5	149B4	Danville NW	Vermilion	1	0	0	0	1	1.0
135A3	Bowen	Adams	10	21	11	3	42	13.0	149C1	Danville SW	Vermilion	0	0	0	1	0	1.0
135B3	Loraine	Adams	21	27	11	2	59	26.5	149C3	Danville SW	Vermilion	60	9	5	7	74	84.0
135C3	Coatsburg	Adams	22	34	5	8	61	49.0	149D3	Danville SE	Vermilion	82	4	9	2	95	201.0
135D3	Camp Point	Adams	23	21	13	1	57	25.0	149D5	Danville SE	Vermilion	74	11	3	4	88	79.0
136A3	Camden	Schuyler	39	18	15	2	72	49.7	149D6	Danville SE	Vermilion	68	14	1	6	83	142.0
136B3	Augusta	Adams	24	23	14	4	61	19.5	150A3	Humrick	Vermilion	77	5	7	2	89	151.0
136C3	Clayton	Adams	28	23	12	1	63	25.5	150B3	Georgetown	Vermilion	65	3	7	2	75	112.0

Appendix B (cont.).

Block	Quad	County	CO	PR	PO	OB	TBE	Hrs	Block	Quad	County	CO	PR	PO	OB	TBE	Hrs
150B4	Georgetown	Vermilion	1	0	0	0	1	1.0	168C3	Summer Hill	Pike	36	33	1	4	70	12.0
150C3	Chrisman	Edgar	13	7	20	1	40	13.5	168D3	Pittsfield	Pike	37	25	2	1	64	7.0
150D3	Scotland	Edgar	18	5	25	1	48	9.0	169A3	Florence	Scott	29	21	17	3	67	16.5
151A3	Sidell	Vermilion	31	13	11	1	55	45.3	169B3	Griggsville	Pike	41	19	4	2	64	45.0
151B3	Allerton	Champaign	19	5	11	0	35	11.0	169C3	Milton	Pike	59	18	9	7	86	104.0
151C3	Newman	Douglas	31	15	16	0	62	22.5	169C5	Milton	Pike	69	25	3	0	97	120.0
151D3	Hume	Edgar	16	3	15	0	34	10.0	169D3	Bedford	Pike	58	24	6	7	88	17.0
152A3	Longview	Champaign	30	10	10	0	50	18.5	169D5	Bedford	Pike	0	0	1	0	1	1.0
152B3	Villa Grove NW	Champaign	27	13	11	3	51	19.8	170A3	Lynnville	Morgan	23	17	17	1	57	9.5
152C3	Villa Grove	Douglas	31	24	6	1	61	6.4	170B3	Winchester	Scott	22	20	18	2	60	11.5
152D3	Murdock	Douglas	25	10	15	0	50	15.6	170C3	Alsey	Scott	28	27	21	1	76	13.0
153A3	Tolono	Champaign	31	14	11	2	56	27.0	170D3	Manchester	Scott	20	19	28	3	67	9.5
153B3	Ivesdale	Piatt	14	7	13	2	34	13.0	171A3	Alexander	Morgan	26	19	15	1	60	10.0
153C3	Atwood	Piatt	33	17	8	4	58	25.0	171B3	Jacksonville	Morgan	35	20	16	6	71	13.3
153D3	Tuscola	Douglas	43	17	18	1	78	26.3	171C3	Nortonville	Morgan	30	20	18	1	68	12.3
154A3	Bement	Piatt	13	6	15	0	34	12.0	171D3	Franklin	Morgan	21	25	15	1	61	8.0
154B3	Cerro Gordo	Piatt	42	26	8	1	76	23.5	172A3	Loami	Sangamon	5	9	31	0	45	3.0
154C3	La Place	Piatt	14	16	1	8	31	13.0	172B3	New Berlin	Sangamon	11	10	15	1	36	10.0
154D3	Hammond	Piatt	27	18	2	6	47	14.5	172C3	Waverly	Morgan	24	22	16	2	62	11.0
155A3	Argenta	Macon	36	26	10	5	72	59.0	172D3	Virden North	Sangamon	5	5	31	0	41	7.0
155B3	Forsyth	Macon	20	16	10	0	46	20.0	173A3	New City	Sangamon	39	2	36	4	77	12.0
155C2	Decatur	Macon	1	0	0	0	1	1.0	173B3	Chatham	Sangamon	8	11	40	0	59	21.0
155C3	Decatur	Macon	43	22	13	2	78	45.5	173C3	Divernon	Sangamon	33	14	9	0	56	8.0
155D3	Long Creek	Macon	29	21	8	1	58	31.0	173D3	Pawnee	Sangamon	25	8	14	0	47	4.0
156A3	Warrensburg	Macon	20	7	12	0	39	26.5	174A3	Grove City	Christian	21	8	16	0	45	33.0
156B3	Latham	Logan	23	14	17	0	54	9.0	174B3	Edinburg	Sangamon	34	8	17	0	59	11.0
156C3	Niantic	Christian	10	32	23	1	65	15.0	174D3	Taylorville	Christian	14	21	33	2	68	28.6
156D3	Harristown	Macon	42	24	16	1	82	51.5	175A3	Macon West	Macon	15	11	6	0	32	13.5
157A3	Lake Fork	Logan	18	21	15	0	54	7.8	175B3	Stonington	Christian	6	9	8	0	23	10.0
157A4	Lake Fork	Logan	11	0	0	0	11	7.0	175C3	Willey's	Christian	23	19	30	5	72	54.1
157B3	Cornland	Sangamon	21	11	16	3	48	7.5	176A3	Dalton City	Macon	15	5	13	7	33	33.5
157C3	Mechanicsburg	Sangamon	38	12	16	1	66	17.5	176B3	Macon East	Macon	18	20	5	5	43	25.5
157D3	Mt. Auburn	Sangamon	36	5	12	0	53	10.8	176C3	Obed	Shelby	18	14	17	2	49	15.0
158A3	Williamsville	Sangamon	44	14	10	0	68	15.0	176D3	Findlay	Shelby	27	7	11	2	45	12.0
158B3	Athens	Menard	47	12	16	3	75	22.5	177A3	Cadwell	Moultrie	25	18	6	3	49	68.5
158C3	Springfield West	Sangamon	11	16	36	0	63	30.0	177B3	Lovington	Moultrie	31	17	7	2	55	54.5
158D3	Springfield East	Sangamon	41	7	17	2	65	34.8	177C3	Kirksville	Moultrie	59	25	7	3	91	87.0
159A3	Salisbury	Menard	38	20	13	3	71	127.5	177D3	Sullivan	Moultrie	48	22	16	8	86	84.3
159B3	Tallula	Menard	35	11	13	1	59	11.0	178A3	Arcola	Douglas	38	14	18	0	70	16.5
159C3	Pleasant Plains	Sangamon	24	7	12	2	43	11.3	178A6	Arcola	Coles	2	0	0	0	2	12.0
159D3	Farmingdale	Sangamon	36	12	13	0	61	16.0	178B3	Arthur	Douglas	20	11	6	1	37	23.8
160A3	Ashland	Cass	18	25	17	1	60	10.8	178C3	Cooks Mills	Coles	41	28	10	2	79	43.2
160B3	Virginia	Cass	10	16	15	0	41	10.0	178D3	Humboldt	Coles	18	15	14	4	47	35.4
160C3	Literberry	Morgan	35	26	10	2	71	16.3	179A3	Oakland	Douglas	35	13	18	1	66	23.5
160D3	Prentice	Morgan	24	22	12	2	58	11.5	179B3	Hindsboro	Douglas	17	12	13	2	42	14.7
161A3	Arenzville East	Cass	34	25	10	5	69	20.5	179C3	Charleston North	Coles	28	13	14	2	55	54.0
161B3	Arenzville West	Cass	29	19	18	3	66	12.6	179D3	Ashmore	Coles	55	24	14	1	93	43.2
161C3	Chapin	Morgan	39	20	15	3	74	19.0	179D5	Ashmore	Coles	4	4	5	0	13	13.5
161D3	Concord	Morgan	40	23	13	4	76	17.4	180A3	Redmon	Edgar	14	4	11	1	29	14.0
162A3	Cooperstown	Brown	52	7	7	3	66	10.0	180B3	Brocton	Edgar	16	10	22	2	48	14.0
162B3	Versailles	Brown	23	29	11	0	63	5.0	180C3	Kansas	Coles	27	17	11	0	55	25.5
162C3	Perry East	Pike	20	26	15	2	61	18.0	180D3	Grandview	Edgar	19	4	15	1	38	14.0
162D3	Meredosia	Pike	35	33	12	2	80	17.0	181A3	Saint Bernice	Edgar	26	5	33	2	64	35.0
163A3	Mount Sterling	Brown	36	20	13	1	69	12.5	181B3	Paris North	Edgar	17	5	13	0	35	12.0
163B3	Kellerville	Adams	27	25	15	5	67	27.5	181C3	Paris South	Edgar	21	12	22	1	55	16.0
163C3	Fishhook	Adams	28	17	13	2	58	8.0	181D3	Sandford	Edgar	25	7	23	1	55	16.0
164A3	Liberty	Adams	14	22	22	2	58	27.0	182A3	Dennison	Clark	27	19	13	2	59	34.0
164B3	Columbus	Adams	8	15	32	2	55	13.0	182B3	Marshall	Clark	32	20	26	2	78	9.0
164C3	Payson	Adams	27	23	15	2	65	23.0	182C3	Snyder	Clark	24	16	30	2	70	23.0
164D3	Richfield	Adams	30	24	8	4	62	28.0	182D3	Hutton	Clark	17	11	33	1	61	14.0
165A3	Quincy East	Adams	36	24	4	2	64	73.5	183A3	Clarksville	Clark	33	24	20	0	77	22.0
165D3	Marblehead	Adams	40	8	12	9	60	67.0	183B3	Westfield East	Clark	23	19	12	2	54	12.3
167A3	Barry	Pike	33	23	21	1	77	15.0	183C3	Casey	Clark	22	7	19	3	48	34.3
167B3	Hull	Pike	27	17	12	3	56	12.0	183D3	Clark Center	Clark	36	19	10	6	65	40.0
167D3	Rockport	Pike	28	36	10	4	74	12.0	184A3	Westfield West	Coles	61	25	5	4	91	162.8
168A3	New Salem	Pike	11	34	20	0	65	6.0	184B2	Charleston South	Coles	57	22	14	1	93	31.1
168B3	Baylis	Pike	27	18	15	2	60	16.0	184B3	Charleston South	Coles	56	20	7	3	83	113.9

Appendix B (cont.).

Block	Quad	County	CO	PR	PO	OB	TBE	Hrs	Block	Quad	County	CO	PR	PO	OB	TBE	Hrs
184B4	Charleston South	Coles	5	10	4	0	19	13.8	201C3	Mount Olive	Macoupin	22	22	8	1	52	7.0
184B6	Charleston South	Coles	1	5	5	0	11	6.3	201D3	Sorento North	Montgomery	25	13	30	2	68	17.5
184C3	Toledo	Cumberland	23	17	15	1	55	18.0	202A3	Bald Knob	Montgomery	19	13	22	1	54	14.3
184D3	Union Center	Cumberland	24	14	17	6	55	12.0	202B3	Hillsboro	Montgomery	56	22	6	2	84	29.0
185A2	Mattoon East	Coles	1	0	0	0	1	4.0	202C3	Coffeen	Montgomery	6	23	33	4	62	22.5
185A3	Mattoon East	Coles	29	18	8	4	55	24.9	202D1	Fillmore	Montgomery	18	19	19	1	56	100.0
185B3	Mattoon West	Coles	39	18	10	1	67	27.6	202D3	Fillmore	Montgomery	4	10	28	1	42	14.0
185C3	Neoga	Cumberland	32	13	13	1	58	13.5	203A3	Ramsey	Fayette	17	17	33	2	67	19.0
185D3	Johnstown	Cumberland	28	18	20	1	66	12.0	203B3	Ramsey Lake	Fayette	22	14	28	2	64	5.0
186A3	Windsor	Shelby	43	9	13	2	65	36.0	203D3	Vera	Fayette	17	13	21	1	51	8.0
186B3	Middlesworth	Shelby	57	25	5	3	87	60.0	204A3	Beecher City	Fayette	35	19	12	1	66	10.5
186C3	Stewardson West	Shelby	75	4	11	2	90	74.0	204B3	Herrick	Fayette	30	21	15	1	66	11.0
186D3	Stewardson East	Shelby	49	16	16	2	81	44.0	204C3	Avena	Fayette	27	14	16	1	57	13.0
187A3	Shelbyville	Shelby	65	12	5	3	82	37.0	204D3	Altamont West	Fayette	26	19	17	0	62	9.0
187B3	Tower Hill	Shelby	47	15	8	1	70	30.0	205A3	Effingham North	Effingham	19	12	21	2	52	12.0
187C3	Lakewood	Shelby	56	3	2	1	61	38.0	205B3	Shumway	Effingham	25	20	23	1	68	10.9
187D3	Fancher	Shelby	82	2	7	3	91	73.0	205C3	Altamont East	Effingham	11	11	17	0	39	9.0
188A3	Pana	Christian	31	9	3	1	43	15.0	205D3	Effingham South	Effingham	20	12	23	7	55	14.0
188B3	Owaneco	Christian	30	11	9	1	50	15.0	206A3	Woodbury	Cumberland	12	9	32	1	53	20.5
188C3	Ohlman	Montgomery	10	4	32	0	46	5.0	206B3	Teutopolis	Effingham	25	7	23	1	55	9.0
188D3	Oconee	Shelby	25	0	0	1	25	16.0	206C3	Dieterich	Effingham	18	21	23	6	62	12.0
189A3	Clarksdale	Christian	21	16	17	2	54	14.5	206D3	Wheeler	Jasper	11	11	7	1	29	7.0
189B3	Morrisonville	Christian	20	15	20	1	55	16.5	207A3	Hazel Dell	Cumberland	22	13	19	1	54	9.0
189C3	Nokomis SW	Montgomery	12	13	9	1	34	18.0	207B3	Greenup	Cumberland	29	10	25	2	64	30.0
189D3	Nokomis	Montgomery	7	5	10	0	22	5.3	207C3	Rose Hill	Jasper	11	23	27	1	61	18.0
190A3	Raymond NE	Montgomery	10	6	8	0	24	8.0	207D3	Yale	Jasper	16	16	22	1	54	19.0
190B3	Farmersville	Macoupin	24	18	5	1	47	8.0	208A3	Annapolis	Clark	28	20	13	1	61	46.5
190C3	Atwater	Macoupin	18	25	12	1	55	11.0	208B3	Moriah	Clark	38	10	26	1	74	25.0
190D3	Raymond	Montgomery	39	13	12	3	64	76.0	208C3	Oblong North	Jasper	11	22	12	1	45	21.5
191A3	Viriden South	Macoupin	26	17	7	1	50	8.0	208D3	Eaton	Crawford	20	12	21	1	53	23.0
191B3	Palmyra	Macoupin	35	22	17	1	74	22.0	209A3	Fairbanks	Clark	8	10	33	1	51	2.5
191C3	Carlinsville West	Macoupin	16	26	13	2	55	15.0	209B3	West Union	Clark	24	34	12	1	70	7.5
191D3	Carlinsville East	Macoupin	21	26	14	2	61	14.5	209C3	Hutsonville	Crawford	9	10	23	0	42	19.0
192A3	Scottville	Macoupin	20	27	10	2	57	15.0	209D3	Merom	Crawford	19	16	27	3	62	16.0
192B3	Athensville	Greene	30	9	22	1	61	12.5	211A3	Heathsville	Crawford	20	19	11	2	50	15.0
192C3	Greenfield	Greene	54	13	5	3	72	24.0	211B3	Flat Rock	Crawford	51	15	0	5	66	80.0
192D3	Hettick	Macoupin	21	34	16	1	71	16.5	211C3	Birds	Lawrence	45	18	4	1	67	16.0
193A3	Roodhouse East	Greene	46	16	9	1	71	16.0	211D3	Russellville	Lawrence	31	19	14	9	64	27.0
193B3	Roodhouse West	Greene	34	9	22	2	65	11.5	212A3	Stoy	Crawford	12	13	13	0	38	15.0
193C3	Carrollton	Greene	46	20	11	2	77	76.3	212B3	Oblong South	Jasper	16	19	15	1	50	13.0
193D3	Daum	Greene	39	15	9	5	63	30.0	212C3	Landes	Richland	41	7	24	3	72	15.0
194A3	Pearl East	Greene	37	15	18	3	70	16.0	212D3	Chauncey	Lawrence	48	10	16	1	74	17.0
194B3	Pearl West	Pike	56	18	10	5	84	34.0	213A3	Ste. Marie	Jasper	12	18	12	1	42	12.0
194C1	Pleasant Dale Vly.	Calhoun	68	21	0	0	89	40.0	213B3	Newton	Jasper	24	13	17	7	54	0.0
194C3	Pleasant Dale Vly.	Calhoun	52	30	3	4	85	37.0	213C3	Wakefield	Richland	44	5	19	3	68	17.0
194D3	Kampsville	Greene	47	12	20	6	79	49.0	213D3	Dundas	Richland	36	19	13	12	68	23.0
195A3	Pleasant Hill East	Pike	47	20	3	11	70	49.5	214A3	Latona	Jasper	14	25	16	1	55	17.5
195B3	Pleasant Hill West	Pike	45	19	3	14	67	83.0	214B3	Eberle	Effingham	13	11	16	2	40	10.3
195D3	Annada	Calhoun	22	8	16	5	46	4.0	214C3	Louisville East	Clay	34	6	19	6	59	12.0
197A3	Hardin	Greene	57	32	16	1	105	43.0	214D3	Sailor Springs	Clay	45	2	15	8	62	13.0
197B3	Hamburg	Calhoun	43	21	8	4	72	16.0	215A3	Hord	Effingham	12	3	21	2	36	6.0
197C3	Foley	Calhoun	20	15	17	4	52	6.0	215B3	Edgewood	Effingham	17	8	12	5	37	9.5
197D3	Nutwood	Calhoun	52	17	15	9	84	30.5	215D3	Louisville West	Clay	39	8	22	5	69	12.0
198A3	Jerseyville North	Greene	34	15	8	3	57	36.0	216A3	Loogootee	Fayette	26	15	22	2	63	6.0
198B3	Boyer Creek	Greene	60	20	5	5	85	48.0	216B3	Brownstown	Fayette	24	21	26	1	71	8.0
198C3	Otterville	Jersey	52	27	5	2	84	68.0	216C3	St. Paul	Marion	19	4	21	1	44	8.0
198D3	Jerseyville South	Jersey	41	21	4	2	66	61.0	216D3	Kinmundy	Marion	27	18	28	1	73	9.4
199A3	Summerville	Macoupin	23	30	18	1	71	7.5	217A3	Vandalia	Fayette	9	5	36	2	50	13.5
199B3	Medora	Jersey	41	20	7	1	68	60.0	217B3	Hagarstown	Fayette	22	13	31	2	66	19.0
199C3	Brighton	Jersey	36	28	7	3	71	68.0	217C3	Wildcat Lake	Fayette	37	25	17	2	79	12.0
199D3	Shipman	Macoupin	21	20	13	2	54	8.0	217D3	Patoka	Marion	21	6	27	1	54	13.0
200A3	Gillespie North	Macoupin	18	28	14	1	60	7.0	218A3	Mulberry Grove	Bond	28	10	15	2	53	10.0
200B3	Plainview	Macoupin	22	39	15	1	76	8.0	218B3	Greenville	Bond	26	22	18	3	66	12.0
200C3	Bunker Hill	Macoupin	25	17	18	1	60	8.0	218C3	Beaver Creek	Bond	28	16	22	1	66	12.0
200D3	Gillespie South	Macoupin	18	21	16	1	55	6.0	218D3	Pleasant Mound	Bond	14	17	19	4	50	8.0
201A3	Butler	Montgomery	17	8	49	1	74	48.0	219A3	Sorento South	Bond	30	21	19	2	70	12.0
201B3	Litchfield	Macoupin	15	19	12	1	46	6.0	219B3	New Douglas	Madison	23	19	18	0	60	8.0

**Appendix B (cont.).**

Block	Quad	County	CO	PR	PO	OB	TBE	Hrs	Block	Quad	County	CO	PR	PO	OB	TBE	Hrs
219C3	Grantfork	Madison	14	28	13	1	55	9.0	241D3	Wayne City	Wayne	36	10	15	7	61	13.0
219D3	Pocahontas	Bond	19	13	21	2	53	9.0	242A3	Harmony	Jefferson	5	6	23	1	34	0.0
220A3	Worden	Madison	9	26	21	6	56	31.5	242B3	Kell	Jefferson	6	12	18	0	36	4.5
220B3	Prairietown	Madison	24	21	14	3	59	26.5	242C3	Mt. Vernon	Jefferson	15	8	33	2	56	3.5
220C3	Edwardsville	Madison	33	22	17	4	72	41.0	242D3	Opdyke	Jefferson	8	8	26	3	42	1.5
220D3	Marine	Madison	36	21	14	1	71	10.0	243A3	Walnut Hill	Jefferson	4	6	26	1	36	1.5
221A3	Bethalto	Madison	25	21	16	1	62	21.3	243B3	Irvington	Washington	22	27	12	2	61	9.0
221B3	Alton	Madison	10	40	20	6	70	14.0	243C3	Ashley	Washington	31	21	8	1	60	13.0
221D3	Wood River	Madison	23	33	9	6	65	27.5	243D3	Woodlawn	Jefferson	17	28	19	3	64	7.0
222A3	Elsah	Jersey	40	33	1	10	74	14.0	244A3	Hoyleton	Washington	29	13	9	3	51	8.0
222B3	Grafton	Calhoun	29	12	34	3	75	7.0	244B3	Addieville	Washington	25	17	13	2	55	9.0
223A3	Brussels	Calhoun	29	20	17	8	66	41.0	244C3	Nashville	Washington	19	24	14	0	57	13.0
225A3	Monks Mound	Madison	46	26	16	10	88	40.0	244D3	Beaucoup	Washington	26	21	12	4	59	0.0
225B3	Granite City	Madison	1	0	2	4	3	1.0	245A3	Okawville	Washington	40	28	8	3	76	12.0
225C3	Cahokia	St. Clair	43	20	20	7	83	38.0	245B3	Venedy	St. Clair	38	24	7	0	69	24.0
225D3	French Village	St. Clair	31	25	17	0	73	53.3	245C3	St. Libory	St. Clair	33	17	12	0	62	20.6
226A3	St. Jacob	Madison	12	45	12	2	69	5.0	245D3	Oakdale	Washington	28	26	13	2	67	16.0
226B3	Collinsville	Madison	25	7	24	1	56	24.0	246A3	Mascoutah	St. Clair	30	30	18	5	78	17.0
226C3	O'Fallon	St. Clair	25	22	19	1	66	21.5	246B3	Freeburg	St. Clair	39	19	10	6	68	39.0
226D3	Lebanon	St. Clair	20	23	18	1	61	17.5	246C3	New Athens West	St. Clair	33	22	14	5	69	18.7
227A3	St. Rose	Clinton	30	22	12	1	64	9.0	246D3	New Athens East	St. Clair	29	17	12	0	58	22.1
227B3	Highland	Madison	18	9	20	0	47	7.0	247A3	Millstadt	St. Clair	41	12	14	7	67	81.0
227C3	Trenton	St. Clair	22	8	14	3	44	31.0	247A5	Millstadt	St. Clair	47	18	11	9	76	88.0
227D3	Breese	Clinton	28	22	20	1	70	9.0	247B3	Columbia	Monroe	34	17	12	3	63	18.0
228A3	Keyesport	Clinton	48	19	10	5	77	16.5	247C3	Waterloo	Monroe	23	29	7	4	59	44.0
228B3	Stolletown	Clinton	44	23	12	4	79	10.0	247D3	Paderborn	Monroe	18	24	15	2	57	220.5
228C3	Beckemeyer	Clinton	28	20	17	1	65	8.0	248D3	Valmeyer	Monroe	30	17	9	5	56	28.0
228D3	Carlyle	Clinton	30	22	16	2	68	9.0	249A3	Selma	Monroe	26	14	17	2	57	21.0
229A3	Fairman	Marion	14	18	33	2	65	13.0	250A3	Ames	Monroe	28	42	6	5	76	19.0
229B3	Boulder	Clinton	42	13	21	6	76	9.0	250B3	Renault	Monroe	29	35	13	6	77	23.0
229C3	Centralia West	Clinton	30	18	19	2	67	6.0	250D3	Prairie Du Rocher	Randolph	39	16	13	2	68	11.0
229D3	Centralia East	Marion	11	17	19	2	47	41.0	251A3	Baldwin	Randolph	34	14	3	2	51	8.0
230A3	Omega	Marion	18	6	28	1	52	12.0	251B3	Red Bud	Randolph	28	2	18	2	48	7.0
230B3	Salem North	Marion	10	30	21	4	61	18.5	251C3	Evansville	Randolph	30	16	11	0	57	10.5
230C3	Salem South	Marion	26	8	33	2	67	17.0	251D3	Walsh	Randolph	28	10	13	1	51	7.5
230D3	Iuka	Marion	21	9	25	1	55	12.0	252A3	Coulterville	Randolph	27	18	6	2	51	8.0
231A3	Xenia NE	Clay	39	7	22	5	68	14.0	252B3	Tilden	Randolph	28	13	8	2	49	11.0
231B3	Xenia	Marion	29	18	25	2	72	9.3	252C3	Steeleville	Randolph	30	12	8	2	50	9.0
231C3	Orchardville	Marion	9	8	30	2	47	17.5	252D3	Percy	Randolph	27	13	11	3	51	7.0
231D3	Johnsonville	Wayne	45	9	12	5	66	16.0	253A3	Todds Mill	Perry	30	19	7	2	56	10.0
232A3	Clay City	Clay	48	3	19	4	70	15.0	253B3	Winkle	Perry	31	17	5	1	53	11.5
232B3	Flora	Clay	41	5	13	5	59	14.0	253C3	Pinckneyville	Perry	27	13	9	2	49	7.5
232C3	Cisne	Wayne	24	6	22	4	52	11.0	253D3	Pyatts	Perry	34	19	8	1	61	10.0
232D3	Enterprise	Wayne	37	10	15	8	62	14.0	254A3	Waltonville	Jefferson	22	9	25	1	56	5.5
233A3	Olney	Richland	53	11	12	4	76	24.0	254B3	Tamaroa	Perry	28	18	8	1	54	8.5
233B3	Noble	Richland	38	10	17	2	65	18.0	254C3	Du Quoin	Perry	28	16	9	2	53	8.5
233C3	Mount Erie	Wayne	42	11	13	5	66	15.0	254D3	Sesser	Franklin	15	15	21	0	51	4.5
233D3	West Salem	Edwards	31	8	16	6	55	87.0	255A3	Spring Garden	Jefferson	25	15	19	1	59	7.1
234A3	Sumner	Lawrence	39	8	21	1	68	14.0	255B3	Ina	Jefferson	26	9	23	2	58	7.9
234B3	Claremont	Richland	34	5	27	6	66	18.0	255C3	Rend Lake Dam	Franklin	29	20	21	9	70	26.0
234C3	Berryville	Edwards	26	16	22	5	64	16.7	255D3	Ewing	Franklin	12	19	20	2	51	8.5
234D3	Lancaster	Wabash	37	12	16	12	65	83.0	256A3	Belle Prairie City	Hamilton	24	7	22	3	53	13.0
235A3	Vincennes	Lawrence	25	24	9	3	58	25.0	256B3	Dahlgren	Jefferson	12	9	30	2	51	3.0
235B3	Lawrenceville	Lawrence	41	10	13	1	64	16.0	256C3	Macedonia	Franklin	19	11	32	0	62	13.7
235C3	St. Francisville	Wabash	31	29	14	20	74	272.0	256D3	McLeansboro	Hamilton	48	5	28	3	81	15.0
237B3	E. Mount Carmel	Wabash	8	22	12	12	42	93.0	257A3	Springerton	White	19	10	18	2	47	18.0
238A3	Mount Carmel	Wabash	25	19	7	8	51	57.0	257B3	Bungay	Hamilton	28	16	17	0	61	22.5
238B3	Bone Gap	Edwards	32	7	13	16	52	38.5	257C3	Thackeray	Hamilton	29	19	21	2	69	27.0
238C3	Grayville	Edwards	29	16	13	5	58	116.8	257D3	Enfield	White	31	19	12	0	62	12.0
238D3	Keensburg	Wabash	15	14	18	4	47	24.8	258A3	Crossville	White	29	15	24	2	68	14.0
239A3	Albion North	Edwards	20	13	7	21	40	132.0	258B3	Centerville	White	17	27	18	1	62	28.0
239B3	Albion NW	Wayne	32	6	12	15	50	13.0	258C3	Carmi	White	28	24	21	2	73	15.0
239C3	Golden Gate	Wayne	39	13	16	5	68	14.0	258D3	Maunie	White	26	7	20	0	53	12.0
240C3	Boyleston	Wayne	40	10	13	1	63	14.0	259B3	New Harmony	White	24	19	15	1	58	11.0
240D3	Burnt Prairie	Wayne	42	3	16	8	61	14.0	259C3	Solitude	White	37	3	2	1	42	19.5
241A3	Crisp	Wayne	34	5	13	7	52	14.0	260A3	Emma	White	18	26	21	0	65	26.5
241C3	Bluford	Jefferson	15	7	30	1	52	2.0	260B3	New Haven	White	28	14	27	0	69	20.0

Appendix B (cont.).

Block	Quad	County	CO	PR	PO	OB	TBE	Hrs	Block	Quad	County	CO	PR	PO	OB	TBE	Hrs
260C3	New Haven SW	Gallatin	15	7	16	1	38	8.5	273A3	Harrisburg	Saline	12	24	17	4	53	19.5
260D3	Wabash Island	Gallatin	16	28	19	2	63	28.5	273B3	Carrier Mills	Williamson	28	5	21	0	54	7.7
261A3	Norris City	White	33	33	15	1	81	29.5	273C3	Stonefort	Johnson	28	25	28	3	81	67.3
261B3	Broughton	Hamilton	31	21	18	0	70	21.0	273D3	Eddyville	Pope	13	24	31	5	68	14.0
261C3	Eldorado	Saline	16	0	32	1	48	16.5	274A3	Equality	Gallatin	21	22	27	2	70	29.8
261D3	Ridgway	Gallatin	23	16	26	1	65	10.0	274B3	Rudement	Saline	15	45	13	4	73	30.0
262A3	Walpole	Hamilton	26	11	20	1	57	13.0	274C3	Herod	Pope	32	25	14	3	71	37.5
262B3	Akin	Franklin	17	19	24	4	60	8.0	274D3	Karbers Ridge	Hardin	21	28	25	2	74	26.0
262C3	Harco	Williamson	27	6	30	0	63	8.5	275B3	Shawneetown	Gallatin	28	21	26	2	75	32.3
262D3	Galatia	Saline	28	2	30	1	60	60.5	275C3	Saline Mines	Hardin	13	30	27	3	70	21.0
263A3	Thompsonville	Franklin	24	12	15	2	51	6.0	275D3	Dekoven	Hardin	11	32	8	3	51	12.0
263B3	West Frankfort	Franklin	28	23	23	3	74	18.0	277A3	Rosiclare	Hardin	7	23	25	2	55	10.0
263C3	Johnston City	Williamson	32	6	25	0	63	11.0	277B3	Shetlerville	Pope	33	28	16	8	77	24.0
263D3	Pittsburg	Williamson	34	11	23	3	68	10.5	277C3	Golconda	Pope	10	2	26	2	38	2.8
264A3	Christopher	Franklin	4	8	28	0	40	6.5	278A3	Waltersburg	Pope	8	32	31	3	71	24.0
264B3	Elkville	Jackson	20	9	48	2	77	37.0	278B3	Glendale	Johnson	25	22	32	3	79	12.0
264C3	De Soto	Jackson	37	11	6	8	54	116.0	278C3	Reevesville	Massac	33	12	20	2	65	23.0
264D3	Herrin	Williamson	36	11	27	0	74	14.5	278D3	Brownfield	Pope	33	17	21	5	71	16.0
265A3	Vergennes	Jackson	16	25	28	2	69	16.0	279A3	Bloomfield	Johnson	17	17	32	3	66	16.0
265B3	Ava	Jackson	22	27	24	2	73	24.5	279B3	Vienna	Johnson	9	16	43	4	68	36.0
265C3	Oraville	Jackson	24	19	35	2	78	29.0	279C3	Karnak	Johnson	27	18	30	4	75	10.0
265D3	Murphysboro	Jackson	42	18	26	2	86	69.1	279D3	Mermet	Massac	22	20	24	3	66	27.1
266A3	Willisville	Jackson	21	19	25	3	65	16.5	280A3	Mt. Pleasant	Union	29	6	15	1	50	12.0
266B3	Welge	Randolph	32	15	17	0	64	7.5	280B3	Anna	Union	36	8	12	1	56	18.0
266C3	Rockwood	Randolph	28	2	24	1	54	6.5	280C3	Dongola	Alexander	42	6	9	1	57	18.0
266D3	Raddle	Jackson	28	40	20	3	88	57.0	280D3	Cypress	Pulaski	33	14	15	1	62	16.0
267A3	Chester	Randolph	29	18	10	1	57	9.5	281A3	Jonesboro	Union	87	11	6	4	104	623.5
267B3	Kaskaskia	Randolph	28	10	11	1	49	7.0	281C3	McClure	Alexander	37	11	22	1	70	19.0
270A3	Pomona	Jackson	65	20	11	5	96	103.5	281D3	Mill Creek	Alexander	42	19	10	11	71	216.5
270A5	Pomona	Jackson	4	4	4	0	12	12.0	283A3	Tamms	Alexander	35	11	11	0	57	16.5
270B3	Gorham	Jackson	38	36	21	3	95	134.9	283B3	Thebes	Alexander	33	12	15	3	60	21.3
270C3	Wolf Lake	Union	52	19	16	4	87	54.0	283D3	Cache	Alexander	39	8	9	3	56	16.0
270D3	Cobden	Union	41	9	14	5	64	15.0	284A3	Olmsted	Pulaski	34	17	11	0	62	17.0
271A3	Crab Orchard Lake	Williamson	68	12	16	1	96	37.0	284B3	Pulaski	Pulaski	31	11	20	1	62	13.3
271B3	Carbondale	Jackson	21	24	31	7	76	39.1	284C3	Cairo	Alexander	38	19	11	0	68	17.0
271C3	Makanda	Union	24	4	27	1	55	7.5	285A3	Joppa	Massac	22	13	34	2	69	6.5
271D3	Lick Creek	Union	23	11	17	1	51	8.0	286A3	Paducah NE	Massac	13	25	34	3	72	18.0
272A3	Crab Orchard	Williamson	25	4	17	9	46	7.0	286B3	Metropolis	Massac	19	13	28	2	60	15.5
272B3	Marion	Williamson	31	11	27	0	69	9.5	287B3	Smithland	Pope	36	30	20	4	86	29.0
272C3	Goreville	Johnson	10	13	44	1	67	26.5	287C3	Little Cypress	Pope	17	5	29	5	51	4.0
272D3	Creal Springs	Johnson	41	14	18	2	73	33.0									

**Appendix C. Summary of atlas data by county. Information in the table was generated from priority block data and uses the highest breeding status category for a species in the county. The columns represent number of species Confirmed (CO), Probable (PR), Possible (PO), and Observed (OB), and the total number with breeding evidence (i.e., the sum of Confirmed, Probable, and Possible) (TBE).**

County	CO	PR	PO	OB	TBE	County	CO	PR	PO	OB	TBE
Adams	81	21	12	9	114	Lee	66	21	13	8	100
Alexander	74	14	12	2	100	Livingston	50	19	12	10	81
Bond	49	16	16	4	81	Logan	52	15	12	3	79
Boone	20	25	24	4	69	McDonough	75	11	10	6	96
Brown	62	18	10	3	90	McHenry	92	15	7	5	114
Bureau	75	13	16	7	104	McLean	87	3	7	4	97
Calhoun	76	16	6	11	98	Macon	67	17	13	5	97
Carroll	72	17	19	4	108	Macoupin	57	20	15	3	92
Cass	48	24	17	3	89	Madison	71	26	12	11	109
Champaign	77	14	10	5	101	Marion	62	14	14	4	90
Christian	55	14	15	5	84	Marshall	70	15	9	6	94
Clark	68	16	16	1	100	Mason	64	14	15	3	93
Clay	65	10	15	3	90	Massac	50	19	20	3	89
Clinton	65	19	9	6	93	Menard	67	11	9	5	87
Coles	78	19	9	3	106	Mercer	70	14	17	5	101
Cook	99	16	26	11	141	Monroe	62	25	12	5	99
Crawford	60	14	14	5	88	Montgomery	69	13	10	4	92
Cumberland	51	16	17	2	84	Morgan	67	18	11	7	96
DeKalb	57	15	11	4	83	Moultrie	75	15	11	10	101
DeWitt	57	21	17	1	95	Ogle	78	14	14	5	106
Douglas	59	20	16	3	95	Peoria	86	19	9	19	114
DuPage	81	6	13	10	100	Perry	54	18	5	2	77
Edgar	49	14	16	1	79	Piatt	58	24	12	2	94
Edwards	55	14	16	11	85	Pike	81	25	4	8	110
Effingham	46	18	24	6	88	Pope	72	18	10	8	100
Fayette	67	18	18	3	103	Pulaski	49	17	9	1	75
Ford	53	18	9	2	80	Putnam	47	15	21	2	83
Franklin	51	21	17	7	89	Randolph	56	19	15	2	90
Fulton	74	15	13	10	102	Richland	63	10	13	4	86
Gallatin	50	28	12	2	90	Rock Island	59	40	12	13	111
Greene	86	16	11	3	113	St. Clair	76	22	19	3	117
Grundy	60	7	20	2	87	Saline	41	31	19	2	91
Hamilton	65	10	21	2	96	Sangamon	68	9	15	4	92
Hancock	79	14	12	6	105	Schuyler	66	8	21	1	95
Hardin	33	40	16	3	89	Scott	46	23	20	3	89
Henderson	53	25	19	2	97	Shelby	89	8	5	5	102
Henry	60	9	14	3	83	Stark	50	16	5	4	71
Iroquois	75	13	11	5	99	Stephenson	76	8	12	1	96
Jackson	87	15	12	9	114	Tazewell	75	11	17	4	103
Jasper	52	20	18	7	90	Union	93	12	6	6	111
Jefferson	45	25	14	2	84	Vermilion	117	2	5	9	124
Jersey	75	17	1	6	93	Wabash	55	23	19	14	97
Jo Daviess	86	10	14	4	110	Warren	55	20	12	2	87
Johnson	66	15	19	6	100	Washington	57	21	9	5	87
Kane	84	10	15	5	109	Wayne	65	13	10	5	88
Kankakee	69	18	12	6	99	White	74	17	14	1	105
Kendall	56	13	15	15	84	Whiteside	63	14	11	8	88
Knox	57	34	11	1	102	Will	102	16	10	4	128
Lake	96	11	16	17	123	Williamson	76	10	13	1	99
LaSalle	84	14	17	6	115	Winnebago	96	23	8	11	127
Lawrence	59	20	5	4	84	Woodford	74	9	5	3	88



**Appendix D. Summary of atlas data by species. For each species in the atlas database, the table lists the number of priority blocks with Confirmed (CO), Probable (PR), Possible (PO), and Observed (OB) records; the total number of priority blocks with breeding evidence (i.e., the sum of Confirmed, Probable, or Possible records) (TBE); and the number of counties with breeding evidence records for the species in priority blocks. Species with no records listed were found only in nonpriority blocks.**

Common Name	Scientific Name	CO	PR	PO	OB	TBE	# of Counties
Canada Goose	<i>Branta canadensis</i>	212	40	38	43	290	78
Mute Swan	<i>Cygnus olor</i>	5	2	5	5	12	8
Wood Duck	<i>Aix sponsa</i>	324	76	76	24	476	98
Gadwall	<i>Anas strepera</i>	0	0	1	0	1	1
American Wigeon	<i>Anas americana</i>	0	0	0	0	0	0
American Black Duck	<i>Anas rubripes</i>	0	1	1	1	2	2
Mallard	<i>Anas platyrhynchos</i>	297	140	90	39	527	95
Blue-winged Teal	<i>Anas discors</i>	35	32	21	13	88	39
Northern Shoveler	<i>Anas clypeata</i>	0	1	0	0	1	1
Northern Pintail	<i>Anas acuta</i>	1	2	1	0	4	4
Green-winged Teal	<i>Anas crecca</i>	0	1	0	4	1	1
Canvasback	<i>Aythya valisineria</i>	0	0	0	0	0	0
Redhead	<i>Aythya americana</i>	0	0	0	1	0	0
Ring-necked Duck	<i>Aythya collaris</i>	0	0	1	0	1	1
Greater Scaup	<i>Aythya marila</i>	0	0	0	0	0	0
Lesser Scaup	<i>Aythya affinis</i>	0	1	0	2	1	1
Bufflehead	<i>Bucephala albeola</i>	0	0	0	0	0	0
Hooded Merganser	<i>Lophodytes cucullatus</i>	7	2	5	5	14	11
Common Merganser	<i>Mergus merganser</i>	0	0	1	0	1	1
Red-breasted Merganser	<i>Mergus serrator</i>	0	0	0	2	0	0
Ruddy Duck	<i>Oxyura jamaicensis</i>	2	1	3	3	6	6
Gray Partridge	<i>Perdix perdix</i>	32	21	12	2	65	19
Ring-necked Pheasant	<i>Phasianus colchicus</i>	276	116	164	9	556	72
Ruffed Grouse	<i>Bonasa umbellus</i>	1	0	0	0	1	1
Greater Prairie-Chicken	<i>Tympanuchus cupido</i>	1	0	0	0	1	1
Wild Turkey	<i>Meleagris gallopavo</i>	58	21	63	8	142	51
Northern Bobwhite	<i>Colinus virginianus</i>	203	392	150	6	745	99
Common Loon	<i>Gavia immer</i>	0	0	1	1	1	1
Pied-billed Grebe	<i>Podilymbus podiceps</i>	27	8	8	17	43	22
Brown Pelican	<i>Pelecanus occidentalis</i>	0	0	0	1	0	0
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	2	12	17	15	10
American Bittern	<i>Botaurus lentiginosus</i>	0	1	5	6	6	5
Least Bittern	<i>Ixobrychus exilis</i>	4	6	9	4	19	15
Great Blue Heron	<i>Ardea herodias</i>	10	1	210	351	221	73
Great Egret	<i>Ardea albus</i>	2	0	36	84	38	21
Snowy Egret	<i>Egretta thula</i>	0	1	0	5	1	1
Little Blue Heron	<i>Egretta caerulea</i>	0	0	7	30	7	5
Tricolored Heron	<i>Egretta tricolor</i>	0	0	1	0	1	1
Cattle Egret	<i>Bubulcus ibis</i>	1	0	11	34	12	9
Green Heron	<i>Butorides virescens</i>	77	143	290	64	510	99
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	3	0	30	46	33	20
Yellow-crowned Night-Heron	<i>Nyctanassa violacea</i>	5	2	11	9	18	13
Black Vulture	<i>Coragyps atratus</i>	0	0	0	14	0	0
Turkey Vulture	<i>Cathartes aura</i>	25	4	0	514	29	17
Osprey	<i>Pandion haliaetus</i>	0	1	1	6	2	2
Mississippi Kite	<i>Ictinia mississippiensis</i>	3	4	2	3	9	6
Bald Eagle	<i>Haliaeetus leucocephalus</i>	6	0	0	10	6	6
Northern Harrier	<i>Circus cyaneus</i>	4	10	31	34	45	28
Sharp-shinned Hawk	<i>Accipiter striatus</i>	3	1	5	12	9	8
Cooper's Hawk	<i>Accipiter cooperii</i>	21	7	17	17	45	25
Red-shouldered Hawk	<i>Buteo lineatus</i>	14	9	22	15	45	29
Broad-winged Hawk	<i>Buteo platypterus</i>	9	7	35	15	51	34
Swainson's Hawk	<i>Buteo swainsoni</i>	1	2	2	2	5	2
Red-tailed Hawk	<i>Buteo jamaicensis</i>	179	234	307	79	720	102
American Kestrel	<i>Falco sparverius</i>	246	159	229	35	634	97
Merlin	<i>Falco columbarius</i>	0	0	0	1	0	0
Peregrine Falcon	<i>Falco peregrinus</i>	0	0	0	2	0	0
King Rail	<i>Rallus elegans</i>	3	1	4	1	8	7
Virginia Rail	<i>Rallus limicola</i>	3	7	9	2	19	10
Sora	<i>Porzana carolina</i>	7	10	20	7	37	16
Common Moorhen	<i>Gallinula chloropus</i>	6	0	5	1	11	9
American Coot	<i>Fulica americana</i>	15	3	14	22	32	23
Sandhill Crane	<i>Grus canadensis</i>	1	0	1	2	2	2

**Appendix D (cont.).**

Common Name	Scientific Name	CO	PR	PO	OB	TBE	# of Counties
Killdeer	<i>Charadrius vociferus</i>	594	207	147	7	948	102
Spotted Sandpiper	<i>Actitis macularia</i>	36	42	72	29	150	56
Upland Sandpiper	<i>Bartramia longicauda</i>	12	9	20	5	41	26
Wilson's Snipe	<i>Gallinago delicata</i>	0	5	5	10	10	8
American Woodcock	<i>Scolopax minor</i>	23	52	66	15	141	57
Wilson's Phalarope	<i>Phalaropus tricolor</i>	0	0	0	1	0	0
Laughing Gull	<i>Larus atricilla</i>	0	0	0	1	0	0
Franklin's Gull	<i>Larus pipixcan</i>	0	0	0	1	0	0
Little Gull	<i>Larus minutus</i>	0	0	0	1	0	0
Ring-billed Gull	<i>Larus delawarensis</i>	1	0	0	47	1	1
Herring Gull	<i>Larus argentatus</i>	0	0	2	11	2	1
Caspian Tern	<i>Sterna caspia</i>	0	1	0	3	1	1
Common Tern	<i>Sterna hirundo</i>	0	0	0	5	0	0
Forster's Tern	<i>Sterna forsteri</i>	1	0	0	4	1	1
Least Tern	<i>Sterna antillarum</i>	0	0	0	1	0	0
Black Tern	<i>Chlidonias niger</i>	4	1	2	6	7	6
Rock Pigeon	<i>Columba livia</i>	510	137	177	37	824	102
Ringed Turtle-Dove	<i>Streptopelia risoria</i>	2	0	0	0	2	2
Mourning Dove	<i>Zenaidura macroura</i>	733	214	41	2	988	102
Monk Parakeet	<i>Myiopsitta monachus</i>	3	0	1	0	4	3
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	39	46	126	22	211	63
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	211	285	282	17	778	102
Barn Owl	<i>Tyto alba</i>	1	3	0	0	4	4
Eastern Screech-Owl	<i>Megascops asio</i>	94	76	156	15	326	85
Great Horned Owl	<i>Bubo virginianus</i>	117	86	196	37	399	93
Barred Owl	<i>Strix varia</i>	60	79	140	20	279	78
Long-eared Owl	<i>Asio otus</i>	0	0	1	1	1	1
Short-eared Owl	<i>Asio flammeus</i>	2	0	2	2	4	2
Common Nighthawk	<i>Chordeiles minor</i>	31	73	129	83	233	77
Chuck-will's-widow	<i>Caprimulgus carolinensis</i>	1	10	18	2	29	16
Whip-poor-will	<i>Caprimulgus vociferus</i>	14	111	134	8	259	72
Chimney Swift	<i>Chaetura pelagica</i>	300	59	487	60	846	102
Ruby-throated Hummingbird	<i>Archilochus colubris</i>	73	122	225	43	420	93
Belted Kingfisher	<i>Ceryle alcyon</i>	144	176	218	49	538	98
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	558	174	129	8	861	102
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	388	172	202	7	762	101
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	1	2	0	1	3	3
Downy Woodpecker	<i>Picoides pubescens</i>	411	218	233	12	862	102
Hairy Woodpecker	<i>Picoides villosus</i>	127	124	259	31	510	101
Northern Flicker	<i>Colaptes auratus</i>	467	206	247	12	920	102
Pileated Woodpecker	<i>Dryocopus pileatus</i>	28	58	110	10	196	62
Eastern Wood-Pewee	<i>Contopus virens</i>	212	348	252	15	812	102
Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>	0	1	0	0	1	1
Acadian Flycatcher	<i>Empidonax virescens</i>	83	92	131	2	306	81
Alder Flycatcher	<i>Empidonax alnorum</i>	0	4	2	2	6	4
Willow Flycatcher	<i>Empidonax traillii</i>	82	160	164	2	406	89
Least Flycatcher	<i>Empidonax minimus</i>	2	3	19	5	24	17
Eastern Phoebe	<i>Sayornis phoebe</i>	390	84	134	16	608	99
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	208	290	244	9	742	101
Western Kingbird	<i>Tyrannus verticalis</i>	0	0	0	1	0	0
Eastern Kingbird	<i>Tyrannus tyrannus</i>	557	250	128	5	935	102
Loggerhead Shrike	<i>Lanius ludovicianus</i>	125	42	77	12	244	80
White-eyed Vireo	<i>Vireo griseus</i>	54	92	126	4	272	75
Bell's Vireo	<i>Vireo bellii</i>	31	55	73	0	159	61
Yellow-throated Vireo	<i>Vireo flavifrons</i>	39	87	175	4	301	92
Warbling Vireo	<i>Vireo gilvus</i>	157	261	260	2	678	102
Red-eyed Vireo	<i>Vireo olivaceus</i>	75	169	252	9	496	98
Blue Jay	<i>Cyanocitta cristata</i>	598	163	196	6	957	102
American Crow	<i>Corvus brachyrhynchos</i>	409	192	326	36	927	102
Fish Crow	<i>Corvus ossifragus</i>	4	3	6	2	13	7
Horned Lark	<i>Eremophila alpestris</i>	532	197	141	10	870	102
Purple Martin	<i>Progne subis</i>	386	35	144	37	565	99
Tree Swallow	<i>Tachycineta bicolor</i>	153	53	107	33	313	81
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	274	129	204	25	607	100
Bank Swallow	<i>Riparia riparia</i>	106	16	57	29	179	75
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	75	15	25	11	115	50

Appendix D (cont.).

Common Name	Scientific Name	CO	PR	PO	OB	TBE	# of Counties
Barn Swallow	<i>Hirundo rustica</i>	897	34	52	3	983	102
Carolina Chickadee	<i>Poecile carolinensis</i>	176	52	55	1	283	42
Black-capped Chickadee	<i>Poecile atricapillus</i>	362	119	83	7	564	69
Tufted Titmouse	<i>Buelophus bicolor</i>	356	163	163	11	682	99
Red-breasted Nuthatch	<i>Sitta canadensis</i>	1	0	0	0	1	1
White-breasted Nuthatch	<i>Sitta carolinensis</i>	272	225	214	22	711	102
Brown Creeper	<i>Certhia americana</i>	1	5	9	15	15	14
Carolina Wren	<i>Thryothorus ludovicianus</i>	193	177	164	6	534	90
Bewick's Wren	<i>Thryomanes bewickii</i>	3	1	0	0	4	4
House Wren	<i>Troglodytes aedon</i>	594	188	109	2	891	101
Sedge Wren	<i>Cistothorus platensis</i>	9	34	25	0	68	35
Marsh Wren	<i>Cistothorus palustris</i>	15	18	10	4	43	18
Golden-crowned Kinglet	<i>Regulus satrapa</i>	1	0	0	0	1	1
Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>	163	131	114	9	408	95
Eastern Bluebird	<i>Sialia sialis</i>	585	97	74	7	756	102
Veery	<i>Catharus fuscescens</i>	7	7	10	3	24	14
Wood Thrush	<i>Hylocichla mustelina</i>	85	190	233	12	508	101
American Robin	<i>Turdus migratorius</i>	949	29	12	0	990	102
Gray Catbird	<i>Dumetella carolinensis</i>	476	282	148	8	906	102
Northern Mockingbird	<i>Mimus polyglottos</i>	290	150	137	9	577	93
Brown Thrasher	<i>Toxostoma rufum</i>	633	209	116	3	958	102
European Starling	<i>Sturnus vulgaris</i>	890	33	49	5	972	102
Cedar Waxwing	<i>Bombycilla cedrorum</i>	146	168	187	52	501	97
Blue-winged Warbler	<i>Vermivora pinus</i>	7	11	21	2	39	23
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	1	0	1	0	2	2
Brewster's Warbler	<i>Vermivora leucobronchialis</i>	0	1	0	0	1	1
Lawrence's Warbler	<i>Vermivora lawrencii</i>	1	0	0	1	1	1
Tennessee Warbler	<i>Vermivora peregrina</i>	0	0	0	1	0	0
Northern Parula	<i>Parula americana</i>	19	60	118	0	197	65
Yellow Warbler	<i>Dendroica petechia</i>	131	151	210	11	492	99
Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	1	4	4	0	9	6
Black-throated Green Warbler	<i>Dendroica virens</i>	0	0	1	0	1	1
Yellow-throated Warbler	<i>Dendroica dominica</i>	11	30	54	3	95	48
Pine Warbler	<i>Dendroica pinus</i>	3	4	10	1	17	11
Prairie Warbler	<i>Dendroica discolor</i>	4	5	17	1	26	11
Bay-breasted Warbler	<i>Dendroica castanea</i>	0	0	0	0	0	0
Blackpoll Warbler	<i>Dendroica striata</i>	0	0	0	0	0	0
Cerulean Warbler	<i>Dendroica cerulea</i>	10	23	30	2	63	27
Black-and-white Warbler	<i>Mniotilta varia</i>	3	4	14	5	21	18
American Redstart	<i>Setophaga ruticilla</i>	27	34	63	18	124	57
Prothonotary Warbler	<i>Protonotaria citrea</i>	54	47	51	4	152	58
Worm-eating Warbler	<i>Helminthos vermivorus</i>	10	8	13	0	31	18
Swainson's Warbler	<i>Limnolophus swainsonii</i>	0	0	1	0	1	1
Ovenbird	<i>Seiurus aurocapilla</i>	8	30	43	7	81	41
Louisiana Waterthrush	<i>Seiurus motacilla</i>	33	31	47	2	111	49
Kentucky Warbler	<i>Oporornis formosus</i>	40	64	103	1	207	74
Mourning Warbler	<i>Oporornis philadelphia</i>	0	0	3	2	3	3
Common Yellowthroat	<i>Geothlypis trichas</i>	320	466	168	1	954	102
Hooded Warbler	<i>Wilsonia citrina</i>	4	7	8	1	19	16
Canada Warbler	<i>Wilsonia canadensis</i>	0	1	3	2	4	3
Yellow-breasted Chat	<i>Icteria virens</i>	63	138	168	5	369	89
Summer Tanager	<i>Piranga rubra</i>	20	52	57	4	129	47
Scarlet Tanager	<i>Piranga olivacea</i>	40	94	141	16	275	93
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	119	296	224	6	639	101
Chipping Sparrow	<i>Spizella passerina</i>	531	184	152	3	867	102
Clay-colored Sparrow	<i>Spizella pallida</i>	0	1	0	0	1	1
Field Sparrow	<i>Spizella pusilla</i>	372	295	187	10	854	102
Vesper Sparrow	<i>Poocetes gramineus</i>	145	168	205	8	518	81
Lark Sparrow	<i>Chondestes grammacus</i>	59	33	62	7	154	59
Savannah Sparrow	<i>Passerculus sandwichensis</i>	95	116	115	18	326	66
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	171	294	251	8	716	100
Henslow's Sparrow	<i>Ammodramus henslowii</i>	5	2	4	0	11	8
Fox Sparrow	<i>Passerella iliaca</i>	0	0	0	0	0	0
Song Sparrow	<i>Melospiza melodia</i>	557	310	93	0	960	102
Swamp Sparrow	<i>Melospiza georgiana</i>	30	25	33	8	88	30
White-throated Sparrow	<i>Zonotrichia albicollis</i>	0	1	0	2	1	1

**Appendix D (cont.).**

Common Name	Scientific Name	CO	PR	PO	OB	TBE	# of Counties
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	0	0	0	1	0	0
Dark-eyed Junco	<i>Junco hyemalis</i>	0	0	0	1	0	0
Northern Cardinal	<i>Cardinalis cardinalis</i>	671	248	54	1	973	102
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	209	221	186	8	616	86
Blue Grosbeak	<i>Guiraca caerulea</i>	32	52	66	8	150	52
Indigo Bunting	<i>Passerina cyanea</i>	506	417	62	1	985	102
Dickcissel	<i>Spiza americana</i>	322	449	128	4	899	101
Bobolink	<i>Dolichonyx oryzivorus</i>	71	96	67	11	234	50
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	893	83	17	1	993	102
Eastern Meadowlark	<i>Sturnella magna</i>	558	288	125	3	971	102
Western Meadowlark	<i>Sturnella neglecta</i>	58	77	78	3	213	48
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	9	1	5	2	15	11
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	0	0	0	0	0	0
Common Grackle	<i>Quiscalus quiscula</i>	854	71	61	3	986	102
Brown-headed Cowbird	<i>Molothrus ater</i>	424	398	129	17	951	102
Orchard Oriole	<i>Icterus spurius</i>	212	118	188	13	518	99
Baltimore Oriole	<i>Icterus galbula</i>	503	142	168	7	813	102
Purple Finch	<i>Carpodacus purpureus</i>	0	0	1	0	1	1
House Finch	<i>Carpodacus mexicanus</i>	225	90	96	17	411	88
Red Crossbill	<i>Loxia curvirostra</i>	1	0	0	0	1	1
Pine Siskin	<i>Carduelis pinus</i>	3	4	3	1	10	7
American Goldfinch	<i>Carduelis tristis</i>	238	557	171	9	966	102
House Sparrow	<i>Passer domesticus</i>	953	20	15	1	988	102
Eurasian Tree Sparrow	<i>Passer montanus</i>	111	13	20	3	144	23

**Appendix E. Summary of breeding evidence criteria in priority blocks. Breeding evidence code definitions are listed in Table 1. The percentage of the total records (59,443) in priority blocks with breeding evidence is as follows: Confirmed 48.0%, Probable 26.2%, and Possible 25.8%.**

Confirmed – CO			Probable – PR			Possible – PO		
Code	Number	Percent	Code	Number	Percent	Code	Number	Percent
NB	1,254	4.4	M	2,293	14.7	/	7,163	46.8
PE	25	0.1	P	6,253	40.1	X	8,153	53.2
DD	312	1.1	T	4,939	31.6			
UN	604	2.1	C	376	2.4			
FL	10,140	35.6	N	558	3.6			
ON	4,902	17.2	A	1,122	7.2			
FS	117	0.4	B	67	0.4			
FY	7,552	26.5						
NE	1,266	4.4						
NY	2,347	8.2						
Total	28,519	100.0	Total	15,608	100.0	Total	15,316	100.0

**Appendix F. Summary of breeding evidence criteria by groups for Confirmed records in priority blocks. Breeding evidence code definitions are given in Table 1.**

SPECIES GROUP	Breeding Evidence Codes										Total
	NB	PE	DD	UN	FL	ON	FS	FY	NE	NY	
Waterfowl	5	-	3	1	781	24	-	10	21	38	883
Upland Gamebirds	-	-	5	5	503	11	-	1	30	16	571
Grebes	-	-	-	-	22	1	-	2	2	-	27
Cormorants	-	-	-	-	-	1	-	-	-	-	1
Hérons	5	-	1	5	40	20	-	11	6	14	102
Vultures	-	-	-	-	7	6	-	2	4	6	25
Hawks	5	-	1	7	248	73	-	92	5	55	486
Upland Gamebirds	-	-	5	5	503	11	-	1	30	16	571
Rails	2	-	-	-	22	-	-	7	2	2	35
Shorebirds	-	-	181	1	386	17	-	24	39	17	665
Gulls/Terns	-	-	-	-	1	1	-	4	-	-	6
Doves	69	1	3	49	461	373	-	75	89	125	1,245
Parakeets	1	-	-	-	-	2	-	-	-	-	3
Cuckoos	25	1	2	11	14	29	6	128	25	9	250
Owls	-	1	1	2	205	11	-	13	2	39	274
Nightjars	-	1	6	-	10	16	-	2	8	3	46
Swifts/Hummingbirds	23	-	-	10	29	274	-	6	15	16	373
Kingfishers	1	-	1	1	28	42	-	62	3	6	144
Woodpeckers	-	2	3	6	678	424	11	675	14	167	1,980
Tyrant Flycatchers	124	1	6	100	240	419	7	385	124	128	1,534
Shrikes	1	-	1	2	59	9	1	29	7	16	125
Vireos	39	-	1	9	71	45	1	133	26	31	356
Crows/Jays	25	-	2	10	516	53	4	315	12	74	1,011
Larks	6	1	5	1	405	12	1	91	8	2	532
Swallows	72	-	2	89	360	864	8	178	51	267	1,891
Chickadees/Titmice	14	1	4	1	447	44	1	327	13	42	894
Nuthatches/Creepers	6	-	-	-	157	24	-	83	2	2	274
Wrens	-	1	5	14	178	228	4	213	44	127	814
Kinglets/Gnatcatchers	13	-	-	-	34	30	-	61	7	19	164
Thrushes	59	2	2	59	488	212	5	446	122	231	1,626
Mimic Thrushes	71	2	11	38	350	177	8	523	111	108	1,399
Starlings	27	-	-	8	356	147	3	283	5	61	890
Waxwings	30	-	-	1	31	21	-	41	5	17	146
Wood Warblers	53	1	7	7	115	120	5	376	36	30	750
Tanagers	4	-	-	1	15	8	2	24	3	3	60
Towhees, Sparrows	90	2	21	7	657	215	6	881	95	110	2,084
Grosbeaks/Buntings	113	4	12	15	536	210	8	651	101	90	1,740
Blackbirds	150	2	26	64	1,381	345	35	1,143	178	258	3,582
Finches	125	2	-	10	134	58	-	76	25	37	467
Weavers Finches	96	-	-	70	175	336	1	179	26	181	1,064
Totals	1,254	25	312	604	10,140	4,902	117	7,552	1,266	2,347	28,519

**Appendix G. Population trend information for species in Illinois from the North American Breeding Bird Survey. Trend is the estimated population trend (% change/year), P is a measure of its statistical significance, and N is the number of routes on which trends were estimated. 95% CI is the 95% confidence intervals of the trend estimate and RA is the weighted regional abundance of the species (average birds/route). The last column is the Credibility Index (CR)(see text for further information). The source of the data is Sauer et al. 2001.**

	1966-2000 Trends						1966-1979			1980-2000			CR
	Trend	P	N	95% CI	95% CI	RA	Trend	P	N	Trend	P	N	
Canada Goose	28.8	<0.01	50	13.8	43.8	2.07	16.9	0.43	3	27.7	<0.01	49	3
Wood Duck	5.1	0.05	49	0.2	9.9	0.49	9.7	0.47	11	3.2	0.24	48	2
Mallard	4.9	0.02	73	0.8	9.0	2.08	13.6	0.05	27	4.6	0.04	72	1
Blue-winged Teal	-5.9	0.08	9	-11.2	-0.7	0.07	-6.3	0.01	6	-10.1	0.12	2	3
Gray Partridge	-7.8	0.42	8	-25.5	9.8	0.05	-9.9	0.55	4	5.7	0.62	7	3
Ring-necked Pheasant	-2.0	0.34	59	-5.9	2.0	11.06	-5.3	0.03	37	0.0	0.98	58	2
Wild Turkey	26.1	<0.01	26	20.8	31.5	0.19	-	-	-	26.4	<0.01	26	3
Northern Bobwhite	-1.9	<0.01	76	-3.1	-0.8	21.67	-6.8	<0.01	56	-1.3	0.04	75	2
Pied-billed Grebe	6.3	0.60	4	-10.6	23.3	0.02	-	-	-	-	-	-	3
Double-crest. Cormorant	49.4	0.15	5	6.4	92.5	0.06	-	-	-	35.7	0.23	5	3
Great Blue Heron	13.5	<0.01	75	7.2	19.9	1.30	-20.8	0.01	12	11.1	<0.01	75	2
Great Egret	13.9	0.03	17	3.1	24.7	0.20	-50.8	0.26	2	24.7	0.10	16	3
Little Blue Heron	0.4	0.96	7	-13.2	13.9	0.17	-	-	-	14.0	0.37	5	3
Cattle Egret	8.5	0.14	6	-0.5	17.6	0.31	-	-	-	6.5	0.01	6	3
Green Heron	1.5	0.22	69	-0.9	3.8	0.51	3.2	0.58	28	0.0	0.99	65	2
Black-crwn. Night-Heron	12.3	0.20	8	-4.2	28.9	0.07	-	-	-	22.2	0.11	8	3
Yellow-crwn. Night-Heron	-3.7	0.32	2	-7.6	0.3	0.14	-	-	-	-15.8	0.07	2	3
Black Vulture	-15.5	0.74	2	-85.3	54.2	0.40	-	-	-	-17.9	0.70	2	3
Turkey Vulture	25.7	0.07	38	-0.9	52.3	0.79	2.4	0.90	8	26.3	0.03	36	3
Northern Harrier	3.4	0.70	8	-13.0	19.8	0.02	-	-	-	5.0	0.36	8	3
Cooper's Hawk	0.3	0.91	8	-5.6	6.3	0.02	-	-	-	-4.6	0.54	8	3
Red-shouldered Hawk	-0.6	0.88	9	-7.5	6.4	0.04	-9.4	0.47	5	9.4	0.25	6	3
Red-tailed Hawk	11.1	<0.01	80	7.9	14.3	0.97	-9.1	0.02	27	10.9	<0.01	80	2
American Kestrel	7.6	0.01	82	1.9	13.4	1.05	-8.0	0.22	30	11.7	<0.01	81	2
Killdeer	8.1	<0.01	82	7.3	8.9	10.82	6.0	0.03	61	8.4	<0.01	82	1
Spotted Sandpiper	5.4	0.70	7	-20.1	30.8	0.01	-	-	-	11.3	0.51	4	3
Upland Sandpiper	8.3	0.15	13	-2.2	18.9	0.09	2.8	0.91	6	18.2	0.14	10	3
American Woodcock	-2.7	0.82	3	-20.6	15.3	0.01	-	-	-	-3.6	0.74	3	3
Ring-billed Gull	36.4	0.21	6	-12.0	84.7	0.66	-	-	-	43.4	0.19	6	3
Herring Gull	3.0	0.33	2	-0.3	6.4	1.04	-	-	-	3.4	0.32	2	3
Rock Pigeon	-1.0	0.14	82	-2.4	0.3	12.88	3.0	<0.01	61	-3.9	0.01	82	2
Mourning Dove	0.5	0.37	82	-0.5	1.5	35.61	-2.5	<0.01	62	1.6	<0.01	82	2
Black-billed Cuckoo	-3.6	0.32	33	-10.4	3.3	0.18	0.7	0.93	20	-5.2	0.16	19	2
Yellow-billed Cuckoo	-2.9	<0.01	77	-4.3	-1.6	3.68	6.1	0.02	57	-3.4	0.04	76	2
Eastern Screech-Owl	-3.0	0.78	3	-21.3	15.3	0.00	-	-	-	-7.7	0.05	2	3
Great Horned Owl	3.5	0.07	43	-0.2	7.3	0.20	22.0	0.10	10	4.4	0.06	38	2
Barred Owl	0.3	0.86	21	-2.8	3.3	0.09	14.3	0.54	8	1.1	0.79	18	3
Common Nighthawk	-9.9	0.10	17	-20.9	1.2	0.04	1.2	0.89	9	0.3	0.94	9	3
Chuck-will's-widow	-16.5	0.12	3	-29.1	-3.9	0.12	-48.4	0.14	3	-	-	-	3
Whip-poor-will	-9.6	0.08	19	-19.9	0.6	0.25	-9.3	0.34	13	-7.3	0.14	13	3
Chimney Swift	-2.5	<0.01	82	-3.4	-1.5	14.24	2.2	0.20	61	-4.0	<0.01	82	2
Ruby-throat. Hummingbird	4.7	0.11	36	-1.0	10.4	0.29	5.6	0.32	22	9.9	0.08	30	2
Belted Kingfisher	5.9	<0.01	55	2.0	9.8	0.27	4.8	0.73	16	4.1	0.04	54	2
Red-headed Woodpecker	-2.8	<0.01	79	-3.9	-1.7	4.53	-0.2	0.91	60	-5.4	<0.01	79	2
Red-bellied Woodpecker	1.7	<0.01	78	0.6	2.9	4.79	-6.9	0.08	46	2.5	<0.01	78	2
Downy Woodpecker	0.0	0.99	75	-1.4	1.4	1.63	4.4	0.23	53	-1.2	0.11	74	1
Hairy Woodpecker	0.6	0.56	42	-1.5	2.8	0.18	-9.5	0.54	15	0.2	0.89	41	2
Northern Flicker	-2.6	<0.01	82	-3.6	-1.6	3.03	-4.5	<0.01	60	-2.9	<0.01	82	1
Pileated Woodpecker	7.1	<0.01	21	3.8	10.3	0.27	9.1	0.20	7	5.9	<0.01	21	2
Eastern Wood-Pewee	0.0	0.97	80	-1.3	1.3	2.56	-4.5	0.12	54	0.7	0.46	80	1
Acadian Flycatcher	-2.1	0.20	28	-5.2	1.0	0.49	-5.2	0.60	18	1.2	0.79	23	2
Willow Flycatcher	-1.0	0.39	56	-3.3	1.3	0.51	2.2	0.68	28	-2.2	0.17	51	2
Least Flycatcher	-1.0	0.85	3	-9.3	7.3	0.01	-	-	-	-	-	-	3
Eastern Phoebe	4.3	<0.01	72	2.5	6.2	0.88	-4.5	0.26	39	6.8	<0.01	68	2
Great Crested Flycatcher	-0.5	0.34	79	-1.5	0.5	2.13	1.7	0.49	51	-0.6	0.56	79	1
Eastern Kingbird	-2.2	<0.01	82	-3.6	-0.9	3.36	-6.3	0.01	58	-1.9	<0.01	82	1
Loggerhead Shrike	-4.5	0.10	34	-9.6	0.6	0.45	-8.5	0.06	20	-2.4	0.39	30	2
White-eyed Vireo	-1.8	0.23	28	-4.6	1.1	0.93	6.2	0.08	15	-3.8	0.10	24	2
Bell's Vireo	-1.3	0.66	21	-6.9	4.3	0.13	7.1	0.15	17	-1.5	0.72	15	2
Yellow-throated Vireo	2.2	0.15	42	-0.7	5.2	0.30	-1.9	0.60	13	1.4	0.54	40	2
Warbling Vireo	2.5	0.01	80	0.7	4.3	2.48	-0.2	0.96	47	2.4	0.02	80	1
Red-eyed Vireo	-0.1	0.93	63	-3.0	2.7	0.67	0.4	0.91	36	2.6	0.14	60	2
Blue Jay	-1.0	0.04	82	-2.0	0.0	9.61	-0.3	0.89	62	-1.7	<0.01	82	1
American Crow	1.7	0.03	82	0.1	3.2	25.76	-1.1	0.41	61	1.7	0.03	82	1
Fish Crow	10.1	0.59	4	-22.7	42.9	0.58	-	-	-	13.6	0.46	4	3

## Appendix G (cont.).

	1966-2000 Trends						1966-1979			1980-2000			CR
	Trend	P	N	95% CI	95% CI	RA	Trend	P	N	Trend	P	N	
Horned Lark	-1.0	0.01	79	-1.8	-0.2	37.44	3.0	0.18	60	-1.4	0.04	79	1
Purple Martin	-3.3	<0.01	71	-5.2	-1.3	2.99	0.8	0.76	54	-2.4	0.22	65	1
Tree Swallow	5.2	0.32	37	-4.8	15.2	0.41	-2.7	0.51	13	8.5	0.46	35	3
N. Rough-winged Swallow	4.5	<0.01	74	2.8	6.2	2.16	15.3	0.01	39	3.6	0.02	72	2
Bank Swallow	0.5	0.85	28	-4.3	5.3	2.58	8.7	0.43	13	2.2	0.76	20	1
Cliff Swallow	28.3	0.11	29	-5.1	61.8	0.84	-	-	-	17.9	0.15	28	3
Barn Swallow	0.7	0.17	82	-0.3	1.6	25.92	4.6	0.01	62	-0.5	0.21	82	2
Carolina Chickadee	-0.8	0.48	25	-2.8	1.3	1.03	-5.5	0.05	18	-1.2	0.51	25	1
Black-capped Chickadee	2.0	0.18	47	-0.9	4.8	1.43	4.7	0.38	25	-0.7	0.57	47	1
Tufted Titmouse	2.0	<0.01	73	0.7	3.2	4.88	-1.9	0.55	51	1.9	0.09	71	1
White-breasted Nuthatch	4.1	<0.01	68	1.7	6.5	1.17	-1.0	0.87	29	1.5	0.31	68	1
Carolina Wren	5.1	<0.01	55	2.6	7.6	2.21	-14.0	<0.01	29	7.7	<0.01	53	2
Bewick's Wren	-13.9	0.17	2	-21.4	-6.5	0.03	44.6	0.71	2	-	-	-	3
House Wren	1.6	0.02	80	0.3	2.8	6.87	1.1	0.58	58	2.4	<0.01	79	1
Sedge Wren	2.3	0.67	15	-8.0	12.5	0.04	-3.0	0.05	5	9.1	0.32	13	3
Marsh Wren	-4.0	0.05	3	-4.6	-3.4	0.02	-	-	-	-76.3	0.01	3	3
Blue-gray Gnatcatcher	1.6	0.43	44	-2.3	5.5	0.91	-3.3	0.69	13	-0.4	0.86	43	2
Eastern Bluebird	3.8	<0.01	76	1.6	6.0	2.60	-14.3	<0.01	38	6.3	<0.01	75	2
Wood Thrush	-1.3	0.29	61	-3.7	1.1	0.98	3.5	0.31	31	-1.6	0.42	60	2
American Robin	2.9	<0.01	82	2.4	3.3	58.45	2.7	<0.01	62	2.1	<0.01	82	1
Gray Catbird	0.7	0.12	82	-0.2	1.7	3.53	4.4	0.01	60	0.0	0.98	82	2
Northern Mockingbird	-2.6	<0.01	65	-4.0	-1.1	4.20	-4.9	<0.01	39	-0.2	0.76	63	2
Brown Thrasher	-0.9	0.01	82	-1.5	-0.2	5.79	-1.9	0.25	62	-0.9	0.08	81	1
European Starling	0.0	0.96	82	-0.9	0.9	101.35	-0.9	0.60	62	0.0	0.99	82	1
Cedar Waxwing	10.3	<0.01	76	6.6	14.0	1.69	9.0	0.50	9	7.7	<0.01	74	1
Blue-winged Warbler	42.2	<0.01	5	38.2	46.2	0.02	-	-	-	22.2	0.31	3	3
Northern Parula	2.7	0.31	21	-2.3	7.8	0.28	11.9	0.49	7	4.0	0.07	20	2
Yellow Warbler	6.3	<0.01	59	4.4	8.2	0.62	8.9	0.05	23	7.1	<0.01	57	2
Yellow-throated Warbler	2.5	0.63	9	-7.2	12.2	0.07	-	-	-	15.7	0.06	9	3
Pine Warbler	6.9	0.30	4	-3.8	17.6	0.90	-	-	-	4.7	0.42	4	3
Prairie Warbler	-6.6	0.50	5	-23.8	10.7	1.44	17.2	0.55	4	-0.1	0.99	3	3
Cerulean Warbler	-12.6	0.35	2	-27.5	2.4	0.01	-	-	-	-17.1	0.40	2	3
American Redstart	-8.1	0.03	13	-14.4	-1.9	0.08	11.8	0.47	7	-0.5	0.87	11	3
Prothonotary Warbler	0.3	0.79	17	-2.0	2.6	0.10	-14.0	<0.01	5	-0.3	0.87	16	2
Worm-eating Warbler	4.6	0.66	4	-13.3	22.4	0.24	-	-	-	3.1	0.80	4	3
Ovenbird	-16.5	0.16	8	-35.0	2.0	0.03	-	-	-	-0.5	0.75	7	3
Louisiana Waterthrush	24.2	0.07	4	10.8	37.6	0.02	-	-	-	21.6	0.09	4	3
Kentucky Warbler	0.6	0.73	20	-2.9	4.2	0.35	7.8	0.08	7	-7.1	0.42	18	2
Common Yellowthroat	-0.6	0.16	82	-1.5	0.2	9.75	0.6	0.57	60	-0.8	0.15	82	1
Yellow-breasted Chat	-3.4	<0.01	48	-5.1	-1.8	1.57	-6.2	0.02	31	-3.0	0.03	42	1
Summer Tanager	3.3	0.18	19	-1.3	8.0	0.35	7.7	0.53	9	7.8	0.09	15	2
Scarlet Tanager	-2.5	0.40	41	-8.3	3.2	0.22	6.6	0.67	15	-0.2	0.94	36	2
Eastern Towhee	-1.2	0.33	70	-3.5	1.2	1.49	-7.8	<0.01	44	0.1	0.90	65	2
Chipping Sparrow	8.0	<0.01	81	6.5	9.5	6.79	1.7	0.64	43	7.3	<0.01	81	1
Field Sparrow	-3.0	<0.01	80	-4.1	-1.8	6.78	-5.7	<0.01	59	-2.4	<0.01	79	1
Vesper Sparrow	-0.6	0.19	58	-1.6	0.3	4.54	-3.6	0.12	31	-1.9	0.21	56	1
Lark Sparrow	-6.9	0.06	21	-13.7	-0.1	0.17	-11.2	0.07	8	0.3	0.90	18	2
Savannah Sparrow	-6.0	0.01	32	-10.5	-1.5	1.54	5.3	0.17	14	-9.6	<0.01	32	2
Grasshopper Sparrow	-7.0	<0.01	76	-9.5	-4.4	3.65	-8.4	0.01	56	-6.7	<0.01	76	1
Song Sparrow	0.1	0.82	81	-1.0	1.2	21.58	-4.7	0.01	61	1.9	<0.01	81	2
Swamp Sparrow	-4.9	<0.01	7	-6.3	-3.5	0.05	20.7	0.31	2	-2.3	0.25	6	3
Northern Cardinal	0.6	0.18	82	-0.3	1.5	20.24	0.1	0.96	62	0.1	0.77	82	1
Rose-breasted Grosbeak	2.9	0.08	64	-0.2	6.0	1.42	13.6	0.01	30	-0.8	0.61	62	2
Blue Grosbeak	1.7	0.39	18	-2.1	5.6	0.42	-7.9	0.14	8	1.8	0.65	16	2
Indigo Bunting	-1.0	<0.01	82	-1.6	-0.4	21.89	0.7	0.36	62	-1.4	<0.01	82	2
Dickcissel	-3.5	<0.01	81	-5.1	-1.9	20.77	-10.7	<0.01	59	-2.0	<0.01	81	2
Bobolink	-9.3	<0.01	39	-13.4	-5.1	1.78	-5.6	0.09	26	-7.4	0.19	31	1
Red-winged Blackbird	-0.3	0.62	82	-1.2	0.7	188.28	1.0	0.53	62	-0.1	0.88	82	1
Eastern Meadowlark	-2.3	0.01	82	-3.9	-0.7	26.86	-10.0	<0.01	61	-0.1	0.84	81	2
Western Meadowlark	-2.3	0.59	47	-10.7	6.1	3.58	-14.4	<0.01	30	1.5	0.57	42	2
Common Grackle	-0.4	0.54	82	-1.8	0.9	105.71	-1.0	0.50	62	0.1	0.83	82	1
Brown-headed Cowbird	1.1	0.05	82	0.0	2.2	13.72	2.0	0.26	62	0.8	0.19	82	1
Orchard Oriole	0.1	0.87	61	-1.3	1.6	1.08	-6.0	0.22	29	-0.4	0.62	59	1
Baltimore Oriole	0.8	0.19	82	-0.4	1.9	3.18	7.0	<0.01	53	-1.2	0.26	82	2
House Finch	23.0	<0.01	78	17.8	28.2	2.18	-	-	-	19.7	<0.01	78	3
American Goldfinch	-0.5	0.56	82	-2.0	1.1	8.52	-3.0	0.07	61	1.1	0.23	82	2
House Sparrow	-2.6	<0.01	82	-3.4	-1.8	173.40	0.9	0.39	62	-4.6	<0.01	82	2
Eurasian Tree Sparrow	6.7	0.18	18	-2.6	16.1	0.49	6.4	0.65	5	4.9	0.26	18	2



**Appendix H. Population trend information for species included in the atlas for the upper Midwest from the North American Breeding Bird Survey. Trend is the estimated population trend (% change/year), P is a measure of its statistical significance, and N is the number of routes on which trends were estimated. 95% CI is the 95% confidence intervals of the trend estimate and RA is the weighted regional abundance of the species (average birds/route). The last column is the Credibility Index (CR) (see text for further information). The source of the data is Sauer et al. 2001.**

	1966-2000 Trends						1966-1979			1980-2000			CR
	Trend	P	N	95% CI	95% CI	RA	Trend	P	N	Trend	P	N	
Canada Goose	18.0	<0.01	319	13.7	22.3	3.73	21.3	<0.01	22	13.4	<0.01	313	1
Mute Swan	5.4	0.33	10	-4.9	15.7	0.40	-	-	-	2.4	0.62	10	3
Wood Duck	4.2	0.01	327	1.0	7.5	0.73	11.3	0.07	81	3.4	0.07	313	2
Mallard	2.2	<0.01	425	0.7	3.7	3.55	5.6	0.03	188	1.4	0.04	410	1
Blue-winged Teal	-4.0	<0.01	126	-5.6	-2.5	0.46	1.0	0.61	73	-4.1	0.01	98	2
Northern Shoveler	0.9	0.52	12	-1.6	3.4	0.03	-3.6	0.75	2	-1.1	0.77	8	3
Northern Pintail	-11.9	0.12	18	-25.4	1.7	0.08	-	-	-	-11.0	0.28	13	3
Hooded Merganser	5.4	0.33	26	-5.1	15.9	0.07	17.7	0.62	4	7.5	0.12	22	3
Ruddy Duck	-9.4	0.03	9	-16.2	-2.6	0.40	-13.7	0.20	4	-9.9	0.09	7	3
Gray Partridge	0.1	0.95	64	-3.5	3.7	0.47	15.6	0.03	26	-5.4	0.03	58	2
Ring-necked Pheasant	-2.2	<0.01	320	-3.6	-0.8	9.99	-0.9	0.34	197	-0.5	0.39	304	1
Ruffed Grouse	1.4	0.48	100	-2.4	5.2	0.28	-1.9	0.51	42	4.0	0.02	85	2
Sharp-tailed Grouse	6.2	0.46	11	-9.3	21.7	0.13	3.9	0.28	5	4.9	0.48	9	3
Greater Prairie-Chicken	-5.7	0.29	9	-15.2	3.8	0.66	14.8	0.03	3	-14.1	0.04	9	3
Wild Turkey	18.0	<0.01	174	12.6	23.4	0.34	13.2	0.24	7	15.7	<0.01	173	2
Northern Bobwhite	-2.6	<0.01	348	-3.4	-1.9	16.06	-4.7	<0.01	221	-1.9	<0.01	314	2
Pied-billed Grebe	-2.1	0.17	81	-5.1	0.9	0.18	14.1	<0.01	32	-6.7	0.03	69	2
Double-crest. Cormorant	24.1	0.23	50	-14.2	62.3	0.55	-	-	-	12.0	0.12	50	3
American Bittern	-5.8	<0.01	109	-7.8	-3.7	0.29	-4.3	0.02	58	-5.8	<0.01	81	2
Least Bittern	-4.9	0.36	6	-10.9	1.2	0.01	-	-	-	-	-	-	3
Great Blue Heron	4.2	<0.01	479	2.7	5.7	1.51	6.0	0.01	165	3.3	<0.01	471	1
Great Egret	12.5	<0.01	53	7.2	17.8	0.42	-22.8	0.12	10	13.8	<0.01	49	2
Little Blue Heron	-1.9	0.71	11	-11.2	7.4	0.51	-10.3	0.02	3	14.6	0.31	8	3
Cattle Egret	7.9	0.05	9	1.9	13.9	0.63	-	-	-	3.9	0.06	9	3
Green Heron	-0.5	0.36	365	-1.7	0.6	0.51	3.5	0.02	194	-1.9	0.02	330	2
Black-crwn. Night-Heron	2.3	0.25	29	-1.5	6.2	0.13	7.8	0.01	10	-1.4	0.88	27	2
Yellow-crwn. Night-Heron	-3.7	0.32	3	-7.6	0.3	0.09	-	-	-	-15.9	0.08	3	3
Black Vulture	5.2	0.03	7	3.4	7.1	0.08	-	-	-	3.1	0.03	6	3
Turkey Vulture	7.4	0.01	288	2.1	12.6	1.23	2.8	0.50	90	7.5	<0.01	275	1
Osprey	29.3	0.01	25	10.8	47.8	0.04	-0.9	0.90	5	15.0	0.02	23	3
Bald Eagle	8.4	0.03	32	1.3	15.5	0.07	-	-	-	12.4	0.08	31	3
Northern Harrier	1.0	0.35	144	-1.1	3.0	0.19	2.6	0.57	51	0.3	0.79	128	2
Sharp-shinned Hawk	7.2	<0.01	40	3.9	10.5	0.02	-8.7	0.05	7	3.5	0.04	32	3
Cooper's Hawk	9.7	<0.01	104	5.3	14.0	0.05	2.8	0.67	10	16.4	<0.01	94	3
Red-shouldered Hawk	0.0	0.99	73	-5.3	5.3	0.09	-8.2	0.27	21	5.1	0.04	55	3
Broad-winged Hawk	0.0	1.00	105	-2.4	2.4	0.12	7.1	0.02	40	-2.6	0.12	96	2
Swainson's Hawk	1.9	0.70	4	-6.7	10.5	0.01	-	-	-	-13.9	0.26	4	3
Red-tailed Hawk	5.0	<0.01	468	3.8	6.1	0.88	1.2	0.51	193	5.3	<0.01	452	2
American Kestrel	2.2	0.01	467	0.6	3.7	0.98	4.3	0.01	222	2.0	0.04	447	2
Virginia Rail	-2.5	0.26	18	-6.7	1.6	0.01	-2.3	0.44	8	-9.2	0.07	11	3
Sora	-1.3	0.53	79	-5.4	2.8	0.19	-0.1	0.98	41	-1.8	0.42	63	2
Common Moorhen	-4.2	0.51	12	-15.7	7.3	0.03	-24.9	0.01	7	-	-	-	3
American Coot	-5.9	<0.01	42	-8.3	-3.5	0.35	-5.4	0.43	18	-9.1	0.01	35	2
Sandhill Crane	11.5	<0.01	95	8.7	14.2	1.83	11.2	<0.01	22	9.2	<0.01	94	1
Killdeer	2.7	<0.01	541	2.1	3.3	10.06	5.3	<0.01	355	2.7	<0.01	531	2
Spotted Sandpiper	-2.3	0.03	112	-4.3	-0.2	0.08	-5.4	<0.01	55	-2.4	0.22	78	3
Upland Sandpiper	-0.5	0.64	180	-2.8	1.7	0.47	-0.3	0.84	102	0.2	0.88	144	2
Wilson's Snipe	-0.1	0.96	135	-1.8	1.7	1.23	5.1	0.05	77	-3.6	<0.01	111	2
American Woodcock	3.0	0.52	34	-5.9	11.9	0.02	7.4	0.47	9	-4.9	0.49	24	3
Ring-billed Gull	6.7	0.11	91	-1.5	14.8	5.22	11.8	<0.01	17	3.2	0.27	89	2
Herring Gull	-2.9	0.26	45	-7.9	2.1	2.61	-3.1	0.67	20	-2.7	0.45	44	1
Forster's Tern	1.0	0.84	10	-7.8	9.7	0.21	-	-	-	-9.9	0.06	10	3
Black Tern	-4.4	0.04	74	-8.5	-0.2	0.71	-0.8	0.79	51	1.6	0.80	49	2
Rock Dove	-0.7	0.05	489	-1.4	0.0	13.10	3.2	<0.01	299	-2.5	<0.01	481	2
Mourning Dove	-0.1	0.76	542	-0.5	0.4	32.39	-0.9	0.03	342	0.5	0.03	533	2
Black-billed Cuckoo	-1.3	0.07	352	-2.7	0.1	0.69	7.4	<0.01	208	-2.9	<0.01	307	2
Yellow-billed Cuckoo	-2.5	<0.01	421	-3.3	-1.8	2.58	5.2	<0.01	255	-3.6	<0.01	386	2
Eastern Screech-Owl	1.5	0.22	13	-0.6	3.6	0.01	-	-	-	-4.7	0.06	8	3
Great Horned Owl	1.1	0.20	214	-0.6	2.7	0.18	1.7	0.79	54	-0.5	0.68	186	2
Barred Owl	3.4	0.18	130	-1.5	8.3	0.10	8.0	0.32	36	2.6	0.09	114	2
Short-eared Owl	13.6	0.03	6	5.4	21.8	0.05	-	-	-	13.8	0.05	5	3

**Appendix H (cont.).**

	1966-2000 Trends						1966-1979			1980-2000			CR
	Trend	P	N	95% CI	95% CI	RA	Trend	P	N	Trend	P	N	
Common Nighthawk	-1.3	0.52	110	-5.2	2.6	0.22	2.9	0.31	56	0.0	0.99	81	2
Chuck-will's-widow	-0.9	0.38	37	-2.9	1.1	0.94	2.6	0.64	21	-2.6	0.17	30	2
Whip-poor-will	-2.5	0.02	133	-4.5	-0.5	0.37	-2.6	0.16	69	-2.3	0.20	112	2
Chimney Swift	-1.6	<0.01	486	-2.2	-1.0	7.66	0.5	0.63	307	-3.1	<0.01	468	2
Ruby-throat. Hummingbird	3.9	<0.01	312	2.0	5.9	0.34	1.8	0.36	106	5.5	<0.01	288	2
Belted Kingfisher	0.1	0.92	391	-1.4	1.5	0.35	2.6	0.16	176	0.0	0.98	366	2
Red-headed Woodpecker	-3.8	<0.01	431	-4.5	-3.0	3.28	0.5	0.51	294	-6.1	<0.01	399	2
Red-bellied Woodpecker	1.6	<0.01	397	0.8	2.3	3.22	-2.6	0.06	179	2.0	<0.01	391	2
Yellow-bellied Sapsucker	1.5	0.21	135	-0.8	3.9	1.34	-0.6	0.76	55	3.8	<0.01	129	2
Downy Woodpecker	0.8	0.01	509	0.2	1.3	1.70	3.7	<0.01	291	-0.6	0.12	495	2
Hairy Woodpecker	1.0	0.10	364	-0.2	2.1	0.45	6.1	0.02	167	0.9	0.41	328	2
Northern Flicker	-3.4	<0.01	543	-3.9	-2.8	3.62	-4.2	<0.01	352	-3.7	<0.01	535	1
Pileated Woodpecker	3.9	<0.01	264	2.6	5.2	0.65	2.3	0.41	94	2.9	<0.01	257	2
Eastern Wood-Pewee	-0.3	0.19	533	-0.8	0.2	3.95	-1.3	0.06	323	-0.2	0.53	518	1
Acadian Flycatcher	-2.0	0.01	157	-3.5	-0.5	0.87	-0.1	0.97	66	-0.8	0.42	141	2
Alder Flycatcher	1.4	0.02	158	0.3	2.5	2.05	0.0	0.99	73	0.9	0.13	145	1
Willow Flycatcher	-0.7	0.18	313	-1.7	0.3	0.84	2.7	0.10	140	-1.3	0.08	295	2
Willow/Alder Flycatcher	0.2	0.60	409	-0.5	0.9	1.86	0.9	0.50	203	-0.4	0.37	389	1
Least Flycatcher	-1.8	<0.01	243	-2.5	-1.0	2.53	-2.0	0.01	139	-0.4	0.45	221	1
Eastern Phoebe	2.3	<0.01	482	1.4	3.3	2.01	-3.5	<0.01	253	4.2	<0.01	466	2
Great Crested Flycatcher	-0.3	0.30	528	-0.9	0.3	3.57	1.5	0.08	327	-0.6	0.15	512	2
Eastern Kingbird	-1.9	<0.01	533	-2.4	-1.3	4.92	-0.9	0.14	345	-2.6	<0.01	522	2
Loggerhead Shrike	-8.4	<0.01	115	-11.3	-5.5	0.63	-9.1	<0.01	73	-4.3	0.01	96	2
White-eyed Vireo	0.0	0.97	141	-1.2	1.1	1.17	4.9	0.01	54	-0.5	0.50	130	2
Bell's Vireo	-4.9	0.21	71	-12.4	2.6	0.20	-0.5	0.91	38	-4.2	0.08	56	2
Yellow-throated Vireo	1.7	0.02	324	0.3	3.1	0.64	-0.6	0.77	137	1.6	<0.01	295	2
Warbling Vireo	-0.1	0.82	493	-0.8	0.6	2.61	-1.9	0.07	292	0.8	0.05	475	2
Red-eyed Vireo	1.8	<0.01	485	1.3	2.3	8.53	2.3	<0.01	283	2.4	<0.01	467	1
Blue Jay	-0.4	0.09	552	-0.8	0.1	10.76	-1.1	0.03	355	-0.7	<0.01	544	1
American Crow	1.3	<0.01	554	0.8	1.8	29.99	1.4	<0.01	357	1.5	<0.01	546	1
Fish Crow	9.2	0.33	6	-6.5	24.8	0.10	-	-	-	16.8	0.33	6	3
Horned Lark	-1.2	<0.01	450	-1.9	-0.5	13.18	0.5	0.71	292	-1.1	0.01	422	1
Purple Martin	-3.2	<0.01	423	-4.1	-2.2	3.20	1.3	0.22	301	-3.8	<0.01	370	2
Tree Swallow	1.7	<0.01	390	0.7	2.7	4.17	5.9	<0.01	174	0.3	0.59	375	2
N. Rough-winged Swallow	1.2	0.04	419	0.1	2.4	1.70	5.6	0.03	213	1.0	0.27	392	1
Bank Swallow	0.6	0.78	258	-3.5	4.7	2.33	2.0	0.52	141	1.1	0.47	215	1
Cliff Swallow	2.1	0.03	271	0.2	4.1	9.78	6.1	0.14	115	0.7	0.62	261	1
Barn Swallow	0.1	0.69	547	-0.4	0.6	22.56	4.9	<0.01	351	-1.5	<0.01	539	2
Carolina Chickadee	-0.1	0.91	145	-1.5	1.4	2.60	-1.8	0.46	67	-0.1	0.90	144	1
Black-capped Chickadee	2.1	<0.01	380	1.3	2.9	3.51	2.3	0.02	218	0.9	0.03	370	1
Tufted Titmouse	0.9	0.08	325	-0.1	1.9	6.19	-4.3	<0.01	188	2.1	<0.01	309	2
Red-breasted Nuthatch	3.0	<0.01	101	1.7	4.3	1.26	-0.8	0.67	36	2.6	<0.01	100	1
White-breasted Nuthatch	1.8	<0.01	472	1.0	2.5	1.86	0.1	0.96	237	0.7	0.07	461	1
Brown Creeper	4.2	0.12	34	-0.9	9.4	0.14	14.9	0.37	4	2.1	0.53	32	3
Carolina Wren	3.2	<0.01	217	1.3	5.2	2.03	-5.7	<0.01	99	7.4	<0.01	205	2
Bewick's Wren	-2.8	0.32	37	-8.3	2.7	0.62	-2.8	0.69	21	0.1	0.97	28	2
House Wren	1.2	<0.01	520	0.8	1.7	9.07	1.9	0.01	326	1.7	<0.01	507	1
Sedge Wren	1.8	0.02	228	0.3	3.3	1.80	-3.0	0.05	114	0.3	0.75	208	1
Marsh Wren	-1.3	0.51	79	-5.3	2.6	0.61	-0.1	0.95	31	-5.1	0.04	69	2
Golden-crowned Kinglet	0.8	0.74	45	-3.9	5.5	0.49	-1.6	0.72	11	5.3	0.05	43	2
Blue-gray Gnatcatcher	-0.4	0.71	240	-2.6	1.8	1.38	-2.8	0.13	75	0.2	0.86	232	1
Eastern Bluebird	2.9	<0.01	494	1.9	4.0	3.55	-9.6	<0.01	248	4.3	<0.01	479	2
Veery	-1.5	<0.01	180	-2.2	-0.9	5.49	1.3	0.31	107	-1.6	<0.01	171	2
Wood Thrush	-0.1	0.70	412	-0.8	0.5	1.87	0.7	0.62	218	0.3	0.55	389	1
American Robin	1.8	<0.01	552	1.5	2.0	48.04	1.3	<0.01	359	1.3	<0.01	544	1
Gray Catbird	0.2	0.53	542	-0.5	0.9	5.05	0.4	0.44	341	0.4	0.19	532	1
Northern Mockingbird	-2.0	<0.01	240	-2.9	-1.2	4.06	-4.6	<0.01	130	0.1	0.89	229	2
Brown Thrasher	-1.8	<0.01	530	-2.4	-1.3	4.87	-0.9	0.08	349	-2.1	<0.01	513	2
European Starling	-0.5	0.05	543	-1.0	0.0	74.62	-0.2	0.79	351	-0.5	0.12	533	1
Cedar Waxwing	1.5	<0.01	471	0.8	2.1	4.40	-0.7	0.53	183	0.3	0.44	459	1
Blue-winged Warbler	0.2	0.89	126	-2.0	2.3	0.42	0.4	0.82	48	-0.3	0.74	116	2
Golden-winged Warbler	-1.4	0.06	100	-2.9	0.0	0.77	-2.5	0.08	46	-0.6	0.58	88	2
Northern Parula	2.3	<0.01	144	1.0	3.6	0.61	2.5	0.33	57	4.0	<0.01	133	2
Yellow Warbler	1.8	<0.01	453	0.8	2.7	3.35	-0.9	0.29	249	1.7	0.03	435	2
Chestnut-sided Warbler	-0.2	0.69	159	-1.0	0.6	5.34	1.7	0.01	83	0.4	0.54	148	1

**Appendix H (cont.).**

	1966-2000 Trends						1966-1979			1980-2000			CR
	Trend	P	N	95% CI	95% CI	RA	Trend	P	N	Trend	P	N	
Black-thr. Green Warbler	0.8	0.48	90	-1.4	2.9	1.93	-2.9	0.26	43	3.3	<0.01	83	2
Yellow-throated Warbler	3.4	0.07	62	-0.2	7.1	0.32	2.3	0.45	15	4.6	0.02	59	2
Pine Warbler	5.8	<0.01	105	3.6	8.1	1.08	11.2	<0.01	38	5.9	<0.01	100	1
Prairie Warbler	-3.0	<0.01	66	-4.7	-1.2	1.05	-0.8	0.72	32	-3.4	<0.01	59	1
Cerulean Warbler	-5.7	<0.01	67	-7.6	-3.8	0.15	-10.5	<0.01	27	-7.5	<0.01	58	2
Black-and-white Warbler	0.7	0.20	163	-0.4	1.8	1.21	-0.4	0.78	78	1.1	0.10	149	1
American Redstart	0.5	0.44	238	-0.8	1.7	1.22	-1.2	0.15	123	2.1	<0.01	220	2
Prothonotary Warbler	2.0	0.09	38	-0.2	4.1	0.11	-6.7	0.06	9	1.8	0.27	36	2
Worm-eating Warbler	3.1	0.16	31	-1.2	7.5	0.59	12.6	0.08	4	2.5	0.25	30	3
Ovenbird	0.9	<0.01	262	0.5	1.3	6.60	1.0	0.14	134	0.8	<0.01	248	1
Louisiana Waterthrush	5.1	<0.01	50	2.5	7.6	0.15	4.4	0.19	13	3.2	0.02	43	2
Kentucky Warbler	0.9	0.16	104	-0.3	2.2	1.18	0.0	0.99	41	0.1	0.95	95	1
Mourning Warbler	0.5	0.42	130	-0.8	1.9	3.68	0.4	0.73	61	-0.4	0.48	130	1
Common Yellowthroat	-0.2	0.30	549	-0.5	0.2	16.06	1.7	<0.01	355	-0.9	<0.01	541	2
Hooded Warbler	3.2	0.03	39	0.4	6.1	0.41	3.8	0.22	10	5.1	<0.01	37	2
Canada Warbler	-0.3	0.81	63	-2.6	2.0	0.89	-2.6	0.24	27	-0.4	0.79	56	2
Yellow-breasted Chat	-1.8	<0.01	206	-2.7	-0.9	2.68	-2.7	<0.01	107	-0.4	0.52	183	2
Summer Tanager	0.4	0.71	109	-1.8	2.6	1.59	2.8	0.23	58	0.8	0.42	98	1
Scarlet Tanager	1.2	<0.01	354	0.4	1.9	1.21	6.2	<0.01	173	0.9	0.06	334	2
Eastern Towhee	-1.3	<0.01	407	-2.1	-0.5	2.31	-3.2	<0.01	239	-0.9	0.08	375	2
Chipping Sparrow	2.0	<0.01	546	1.5	2.5	10.94	1.1	0.03	307	2.0	<0.01	537	1
Clay-colored Sparrow	-0.3	0.58	133	-1.5	0.9	3.39	-0.5	0.60	74	0.0	0.94	126	1
Field Sparrow	-3.0	<0.01	466	-3.6	-2.4	7.64	-5.0	<0.01	286	-2.8	<0.01	447	2
Vesper Sparrow	-2.1	<0.01	403	-3.0	-1.2	8.04	-1.6	0.07	251	-1.0	0.41	371	1
Lark Sparrow	-3.1	0.09	87	-6.5	0.4	0.29	-6.8	0.01	45	0.4	0.83	71	2
Savannah Sparrow	-1.1	0.03	378	-2.2	-0.1	10.63	-0.5	0.45	218	-0.9	0.04	367	1
Grasshopper Sparrow	-5.6	<0.01	425	-8.0	-3.2	3.76	-5.5	<0.01	275	-4.0	<0.01	388	1
Henslow's Sparrow	-6.2	0.01	90	-10.7	-1.7	0.16	-4.0	0.30	51	-7.5	0.07	56	2
Song Sparrow	0.4	0.04	523	0.0	0.8	24.90	-2.2	<0.01	331	0.9	<0.01	516	2
Swamp Sparrow	2.1	<0.01	208	0.8	3.4	1.35	1.6	0.35	100	0.8	0.25	197	1
Northern Cardinal	0.7	<0.01	453	0.2	1.2	16.19	-0.3	0.56	271	0.6	0.03	441	1
Rose-breasted Grosbeak	0.3	0.43	415	-0.5	1.1	3.34	3.4	<0.01	241	-0.3	0.50	403	2
Blue Grosbeak	1.6	0.29	95	-1.4	4.7	1.21	10.0	0.16	46	1.1	0.47	86	1
Indigo Bunting	-0.6	<0.01	534	-0.9	-0.3	15.78	1.4	<0.01	341	-1.4	<0.01	522	2
Dickcissel	-3.4	<0.01	348	-4.1	-2.7	17.25	-8.3	<0.01	228	-1.5	<0.01	321	2
Bobolink	-2.8	<0.01	399	-3.8	-1.7	8.03	-2.1	0.01	256	-3.5	<0.01	377	1
Red-winged Blackbird	-1.1	<0.01	551	-1.5	-0.6	129.17	0.6	0.24	359	-1.2	<0.01	542	2
Eastern Meadowlark	-2.7	<0.01	485	-3.6	-1.7	19.12	-5.9	<0.01	311	-1.6	<0.01	467	2
Western Meadowlark	-4.2	<0.01	273	-5.4	-2.9	14.16	-5.1	<0.01	192	-2.0	0.01	240	2
Yellow-headed Blackbird	-3.7	<0.01	73	-5.5	-1.8	4.64	10.6	0.26	45	-8.9	<0.01	67	2
Brewer's Blackbird	1.9	0.07	123	-0.2	3.9	3.68	4.6	0.01	69	0.9	0.54	113	1
Common Grackle	-1.1	<0.01	545	-1.8	-0.4	64.59	0.3	0.64	354	-1.2	0.01	536	1
Brown-headed Cowbird	-0.6	0.02	548	-1.1	-0.1	17.69	0.4	0.52	357	-0.4	0.16	538	1
Orchard Oriole	-0.6	0.31	286	-1.8	0.6	1.04	-2.6	0.07	111	-0.4	0.44	267	1
Baltimore Oriole	-0.2	0.47	525	-0.8	0.4	4.16	2.6	<0.01	329	-1.2	<0.01	509	2
House Finch	22.2	<0.01	381	19.2	25.2	2.61	-	-	-	18.2	<0.01	381	3
Red Crossbill	9.7	0.21	20	-4.8	24.2	0.09	-9.0	0.23	6	23.6	0.09	14	3
Pine Siskin	5.7	0.07	41	-0.3	11.7	0.27	0.9	0.91	10	4.0	0.33	37	2
American Goldfinch	0.0	0.96	551	-1.0	1.0	11.43	-4.5	<0.01	353	1.0	<0.01	542	2
House Sparrow	-2.3	<0.01	514	-2.7	-1.9	96.55	0.1	0.87	332	-4.2	<0.01	505	2
Eurasian Tree Sparrow	6.6	0.17	18	-2.5	15.7	0.49	6.2	0.66	5	5.1	0.26	18	2

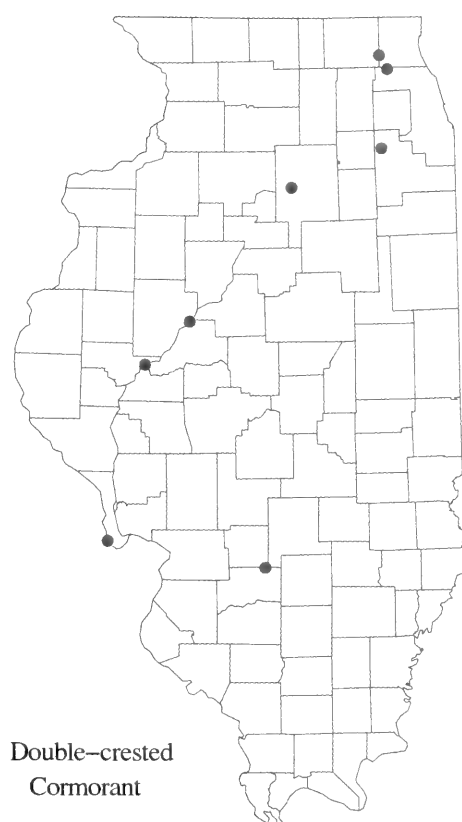
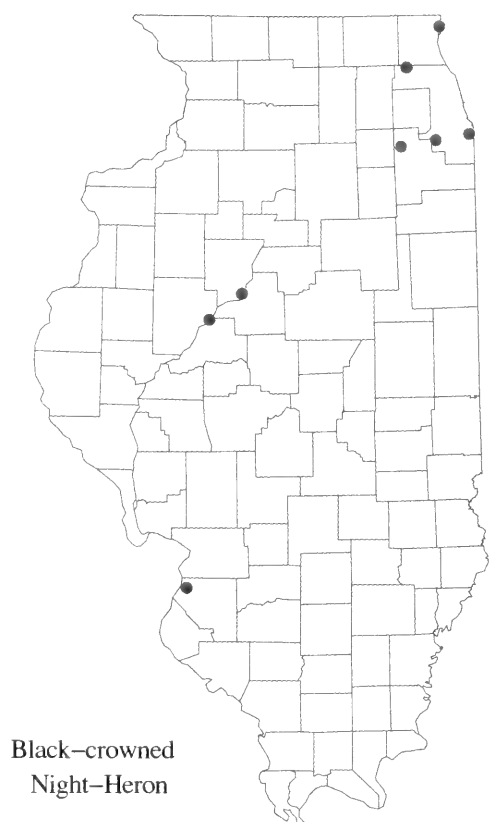
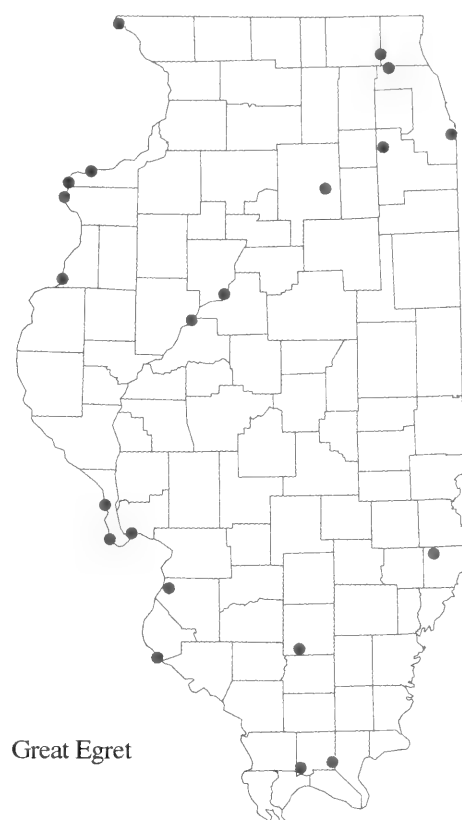
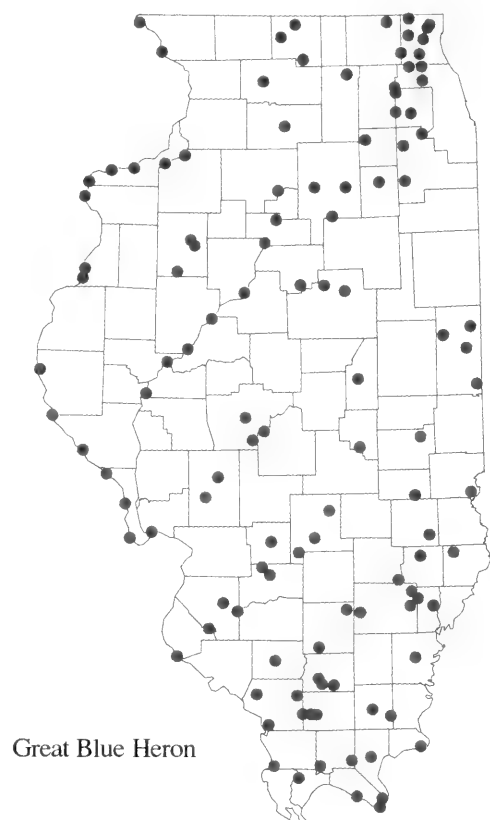
**Appendix I. Common and scientific names of plants and animals mentioned in the text.**

Common Name	Scientific Name
<b>Animals</b>	
Avian Species*	
Bachman's Sparrow	<i>Aimophila aestivalis</i>
Black Rail	<i>Laterallus jamaicensis</i>
Eared Grebe	<i>Podiceps nigricollis</i>
Nashville Warbler	<i>Vermivora ruficapilla</i>
Piping Plover	<i>Charadrius melodus</i>
Ringed Turtle-Dove	<i>Streptopelia risoria</i>
Crawfish	
Carpenter ants	Subfamily Formicinae
Opossum	<i>Didelphis marsupialis</i>
Rabbit	<i>Sylvilagus floridanus</i>
Skunk	<i>Mephitis mephitis</i>
Squirrels	<i>Sciurus carolinensis</i> or <i>S. nigra</i>
Woodchuck	<i>Marmota monax</i>
<b>Plants</b>	
Alfalfa	<i>Medicago sativa</i>
Bearded moss lichen	<i>Usnea</i> spp.
Beech	<i>Fagus grandifolia</i>
Blackberry	<i>Rubus</i> spp.
Bulrush	<i>Scirpus</i> spp.
Cane, Giant	<i>Arundinaria</i> spp.
Cattails	<i>Typha</i> spp.
Cedar, Red	<i>Juniperus virginiana</i>
Clover, Red	<i>Trifolium pratense</i>
Corn	<i>Zea mays</i>
Cottonwood	<i>Populus deltoides</i>
Cypress, bald	<i>Taxodium distichum</i>
Elm, winged	<i>Ulmus alata</i>
Gum, Tupelo	<i>Nyssa aquatica</i>
Hickory	<i>Carya</i> spp.
Loosestrife, purple	<i>Lythrum salicaria</i>
Maple, Silver	<i>Acer saccharum</i>
Oak	<i>Quercus</i> spp.
Reed, common	<i>Phragmites australis</i>
Sedge	<i>Carex</i> spp. in part
Spanish moss	<i>Tillandsia</i> spp.
Sunflower	<i>Helianthus annuus</i>
Sycamore	<i>Platanus occidentalis</i>
Willow	<i>Salix</i> spp.

\*Species not included as a species account or in the tables.

**Appendix J. Measurement conversions.**

1 foot = 0.3 meters
1 yard = 0.9 meters
1 mile = 1609 meters
1 mile = 1.6 kilometers
1 acre = 4047 square meters
1 acre = 0.4 hectares
1 acre = 43560 square feet
1 square mile = 640 acres
1 square mile = 2.6 square kilometers



Appendix K. Locations of colonies of four species of colonial waterbirds in 2000. Data were collected by aerial surveys and ground counts (Kleen 2002b).

## Literature Cited

- Adkisson, C.S. 1996. Red Crossbill (*Loxia curvirostra*). In A. Poole and F. Gill, eds. The birds of North America, No. 256. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- American Ornithologists' Union. 1973. Thirty-second supplement to the American Ornithologists' Union check-list of North American birds. Auk 90:411–419.
- American Ornithologists' Union. 1998. Check-list of North American birds. 7th ed. American Ornithologists' Union, Washington, DC. 829 pp.
- Anderson, A. 2002. Nesting Ring-billed Gulls on a rooftop in Des Plaines, Illinois, with comments on similar occurrences in the eastern United States and England. Meadowlark 11:17–21.
- Anderson, D.W., and J.J. Hickey. 1972. Eggshell changes in certain North American birds. Proceedings of the International Ornithological Congress 15:514–540.
- Anderson, T.R. 1978. Population studies of European Sparrows in North America. Occasional Papers of the Museum of Natural History, University of Kansas 70:1–58.
- Ankney, C.D., and A.D. Afton. 1988. Bioenergetics of breeding Northern Shovelers: diet, nutrient reserves, clutch size, and incubation. Condor 90:459–72.
- Arcese, P., M.K. Sogge, A.B. Marr, and M.A. Patten. 2002. Song Sparrow (*Melospiza melodia*). In A. Poole and F. Gill, eds. The birds of North America, No. 704. The Birds of North America, Inc., Philadelphia, PA.
- Armstrong, J.T. 1965. Breeding home range in nighthawk and other birds; its evolutionary and ecological significance. Ecology 46:619–629.
- Askins, R.A. 2000. Restoring North American birds. Yale University Press, New Haven CT. 320 pp.
- Austin, J.E., and M.R. Miller. 1995. Northern Pintail (*Anus acuta*). In A. Poole and F. Gill, eds. The birds of North America, No. 163. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Banks, R.C., C. Cicero, J.L. Dunn, A.W. Kratter, P.C. Rasmussen, J.V. Remsen, J.D. Rising, and D.F. Stotz. 2002. Forty-third supplement to the American Ornithologists' Union check-list of North American birds. Auk 119:897–906.
- Banks, R.C., C. Cicero, J.L. Dunn, A.W. Kratter, P.C. Rasmussen, J.V. Remsen, J.D. Rising, and D.F. Stotz. 2003. Forty-fourth supplement to the American Ornithologists' Union check-list of North American birds. Auk 120(3):923–931.
- Barlow, J.C. 1960. Courtship feeding in the Lark Sparrow. Bulletin of the Kansas Ornithological Society 11:2.
- Barlow, J.C., and S.N. Leckie. 2000. Eurasian Tree Sparrow (*Passer montanus*). In A. Poole and F. Gill, eds. The birds of North America, No. 560. The Birds of North America, Inc., Philadelphia, PA.
- Barnes, R.M. 1890. List of birds breeding in Marshall Co., Ill. Ornithologist and Oologist 15(1):10.
- Barnes, R.M. 1912. Breeding birds of Marshall Co., Ill. Oologist 29(8):325–328.
- Barnes, R.M. 1926. American Egret. Oologist 43(2):28.
- Barrows, W.B. 1889. The English Sparrow in North America, especially in its relations to agriculture. U.S. Department of Agriculture Division of Economic Ornithology and Mammalogy Bulletin 1. 401 pp.

- Beason, R.C. 1995. Horned Lark. *In* A. Poole and F. Gill, eds. The birds of North America, No. 105. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Becker, C.N. 1980. Avifauna use of Illinois airports. Paper presented at the 42nd Midwest Fish and Wildlife Conference, St. Paul, MN. 15 pp.
- Bednarz, J.C., and J.J. Dinsmore. 1981. Status, habitat use, and management of Red-shouldered Hawks in Iowa. *Journal of Wildlife Management* 45:236–241.
- Bednarz, J.C., and J.J. Dinsmore. 1982. Nest-sites and habitat of Red-shouldered and Red-tailed hawks in Iowa. *Wilson Bulletin* 94:31–45.
- Beecher, W.J. 1942. Nesting birds and the vegetation substrate. Chicago: Chicago Ornithological Society. 69 pp.
- Belant, J.L., T.W. Seamans, S.W. Gabrey, and S.K. Ickes. 1993. Importance of landfills to nesting Herring Gulls. *Condor* 95:817–830.
- Bellrose, F.C. 1944. Bald Eagles nesting in Illinois. *Auk* 61:467–468.
- Bellrose, F.C. 1976. Ducks, geese and swans of North America. Stackpole Books, Harrisburg, PA. 544 pp.
- Bellrose, F.C., and D.J. Holm. 1994. Ecology and management of the Wood Duck. Wildlife Management Institute. Stackpole Books, Mechanicsburg, PA. 588 pp.
- Benkman, C.W. 1990. Foraging rates and the timing of crossbill reproduction. *Auk* 107:376–386.
- Bennett, E. 1957. Nesting birds of the shoreline and islands of Crab Orchard Lake, Illinois. *Transactions of the Illinois State Academy of Science* 50:259–64.
- Bent, A.C. 1940. Life histories of North American cuckoos, goatsuckers, hummingbirds and their allies. U.S. National Museum Bulletin 176. 506 pp.
- Bernhardt, G.E., L. Van Allsburg, and R.A. Dolbeer. 1987. Blackbird and starling feeding behavior on ripening corn ears. *Ohio Journal of Science* 87:125–129.
- Best, L.B. 1978. Field Sparrow reproductive success and nesting ecology. *Auk* 95:9–22.
- Best, L.B., H.I. Campa, K.E. Kemp, R.J. Robel, M.R. Ryan, J.A. Savidge, H.P. Weeks, and S.R. Winterstein. 1997. Bird abundance and nesting in CRP fields and cropland in the Midwest: a regional approach. *Wildlife Society Bulletin* 25:864–877.
- Bildstein, K.L., and K. Meyer. 2000. Sharp-shinned Hawk (*Accipiter striatus*). *In* A. Poole and F. Gill, eds. The birds of North America, No. 482. The Birds of North America, Inc., Philadelphia, PA.
- Blake, E.R. 1940. The season: Chicago region. *Bird-Lore* 38:389–390.
- Blake, J.G., and J.R. Karr. 1987. Breeding birds of isolated woodlots: area and habitat relationships. *Ecology* 68:1724–1734.
- Blokpoel, H., and B. Smith. 1988. First records of roof nesting by Ring-billed Gulls and Herring Gulls in Ontario. *Ontario Birds* 6:15–18.
- Blus, L.J., C.J. Henny, and T.E. Kaiser. 1980. Pollution ecology of breeding Great Blue Herons in the Columbia Basin, Oregon, and Washington. *Murrelet* 61:63–71.
- Bohlen, H.D. 1989. The birds of Illinois. Indiana University Press, Bloomington. 221 pp.
- Bollinger, E.K., and T.A. Gavin. 1991. Patterns of extra-pair fertilizations in Bobolinks. *Behavior Ecology and Sociobiology* 29:1–7.



- Bouzat, J.L., H.H. Cheng, H.A. Levin, R.L. Westemeier, J.D. Brawn, and K.N. Paige. 1998. Genetic evaluation of demographic bottleneck in the Greater Prairie-Chicken. *Conservation Biology* 12(4):836–843.
- Brauning, D.W. 1992. Atlas of breeding birds in Pennsylvania. University of Pittsburgh Press, Pittsburgh, PA. 484 pp.
- Brawn, J.D., and S.K. Robinson. 1996. Source-sink population dynamics may complicate the interpretation of long-term census data. *Ecology* 77:3–12.
- Brennan, L.A. 1999. Northern Bobwhite (*Colinus virginianus*). In A. Poole and F. Gill, eds. The birds of North America, No. 397. The Birds of North America, Inc., Philadelphia, PA.
- Brewer, R. 1963. Ecological and reproductive relationships of Black-capped and Carolina Chickadees. *Auk* 80:9–47.
- Brisbin, I.L., Jr., and T.B. Mowbray. 2002. American Coot (*Fulica americana*). In A. Poole and F. Gill, eds. The birds of North America, No. 697. The Birds of North America, Inc., Philadelphia, PA.
- Briskie, J.V. 1994. Least Flycatcher (*Empidonax minimus*). In A. Poole and F. Gill, eds. The birds of North America, No. 99. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Brown, B.T. 1993. Bell's Vireo. In A. Poole, P. Stettenheim, and F. Gill, eds. The birds of North America, No. 35. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Brown, C.R. 1997. Purple Martin (*Progne subis*). In A. Poole and F. Gill, eds. The birds of North America, No. 287. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Brown, C.R., and M.B. Brown. 1995. Cliff Swallow (*Petrochelidon pyrrhonota*). In A. Poole and F. Gill, eds. The birds of North America, No. 149. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Brown, C.R., and M.B. Brown. 1999. Barn Swallow (*Hirundo rustica*). In A. Poole and F. Gill, eds. The birds of North America, No. 452. The Birds of North America, Inc., Philadelphia, PA.
- Brown, M., and J.J. Dinsmore. 1986. Implication of marsh size and isolation for marsh bird management. *Journal of Wildlife Management* 50:392–397.
- Brua, R.B. 2002. Ruddy Duck (*Oxyura jamaicensis*). In A. Poole and F. Gill, eds. The birds of North America, No. 696. The Birds of North America, Inc., Philadelphia, PA.
- Bull, E.L., and J.E. Jackson. 1995. Pileated Woodpecker (*Dryocopus pileatus*). In A. Poole and F. Gill, eds. The birds of North America, No. 148. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithological Union, Washington, DC.
- Burger, J.F. 1978. The pattern and mechanism of nesting in mixed-species heronies. In A. Sprunt IV, J.C. Ogden, and S. Winckler, eds. Wading birds. Research Report No. 7. National Audubon Society, New York. 381 pp.
- Burke, D.M., and E. Nol. 2000. Landscape and fragment size effects on reproductive success of forest-breeding birds in Ontario. *Ecological Applications* 10:1749–1761.
- Bystrak, D. 1981. The North American Breeding Bird Survey. Pages 34–41 in C.J. Ralph and J.M. Scott, eds. Estimating numbers of terrestrial birds. *Studies in Avian Biology* No. 6.
- Bystrak, D., and C.S. Robbins. 1977. Bird population trends detected by the North American Breeding Bird Survey. *Population Ecology Studies* 3:131–143.
- Cabe, P.R. 1993. European Starling (*Sturnus vulgaris*). In A. Poole and F. Gill, eds. The birds of North America, No. 48. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.

- Calhoun, J.C., and J.K. Garver. 1974. The Wild Turkey in Illinois. Illinois Department of Conservation. 7 pp.
- Campaign for Sensible Growth. 1999. Sensible growth in Illinois: tools for local communities. Campaign for Sensible Growth, Chicago. 12 pp.
- Campbell, M.F., ed. 2002. Finding Bald Eagles in Illinois. Illinois Audubon Society, Danville. 54 pp.
- Carey, M., D.E. Burhans, and D.A. Nelson. 1994. Field Sparrow (*Spizella pusilla*). In A. Poole and F. Gill, eds. The birds of North America, No. 103. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Cavitt, J.F., and C.A. Haas. 2000. Brown Thrasher (*Toxostoma rufum*). In A. Poole and F. Gill, eds. The birds of North America, No. 557. The Birds of North America, Inc., Philadelphia, PA.
- Chapel, R.C. 1984. Illinois' breeding Pine Siskins. Illinois Audubon Bulletin 207:46–48.
- Cimprich, D.A., and F.R. Moore. 1995. Gray Catbird (*Dumetella carolinensis*). In A. Poole and F. Gill, eds. The birds of North America, No. 167. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Cink, C.L. 2002. Whip-poor-will. In A. Poole and F. Gill, eds. The birds of North America, No. 620. The Birds of North America, Inc., Philadelphia, PA.
- Cink, C.L., and C.T. Collins. 2002. Chimney Swift. In A. Poole and F. Gill, eds. The birds of North America, No. 646. The Birds of North America, Inc., Philadelphia, PA.
- Clawson, S.D. 1980. Comparative ecology of the Northern Oriole (*Icterus galbula*) and Orchard Oriole (*Icterus spurius*) in western Nebraska. Master's Thesis, University of Nebraska, Lincoln.
- Coleman, J.S., and J.D. Fraser. 1987. Food habits of Black and Turkey Vultures in Pennsylvania and Maryland. Journal of Wildlife Management 51:733–59.
- Colvin, B.A. 1985. Common Barn Owl population decline in Ohio and the relationship to agricultural trends. Journal of Field Ornithology 56:224–235.
- Confer, J.L. 1992. Golden-winged Warbler. In A. Poole, P. Stettenheim, and F. Gill, eds. The birds of North America, No. 20. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Conway, C.J. 1999. Canada Warbler (*Wilsonia canadensis*). In A. Poole and F. Gill, eds. The birds of North America, No. 421. The Birds of North America, Inc., Philadelphia, PA.
- Cooke, W.W. 1888. Report on bird migration in the Mississippi Valley in the years 1884 and 1885. U.S. Department of Agriculture, Division of Economic Ornithology Bulletin 2. Washington, DC. 313 pp.
- Cornell Laboratory of Ornithology. 2000. An atlas of Cerulean Warbler populations. Cerulean Warbler Atlas Project Home Page, <http://birds.cornell.edu/cewap/:17-19>.
- Cory, C.B. 1909. The birds of Illinois and Wisconsin. Field Museum of Natural History Publication 131, Zoological Series 9:1–766.
- Dann, D. 1999. Successful breeding of Common Terns in Illinois: with a summary of Common Tern nesting occurrences in Illinois. Meadowlark 8:12–13.
- Dawson, W.R. 1997. Pine Siskin (*Carduelis pinus*). In A. Poole and F. Gill, eds. The birds of North America, No. 280. The Academy of Natural Sciences, Philadelphia, PA, and the American Ornithologists' Union, Washington, DC.

- DeJong, M.J. 1996. Northern Rough-winged Swallow (*Stelgidopteryx serripennis*). In A. Poole and F. Gill, eds. The birds of North America, No. 234. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Derrickson, K.C., and R. Breitwisch. 1992. Northern Mockingbird. In A. Poole, P. Stettenheim, and F. Gill, eds. The birds of North America, No. 7. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- DeSante, D.F., and T.C. George. 1994. Population trends in the landbirds of western North America. Pages 173–190 in J.R. Jehl, Jr., and N.K. Johnson, eds. A century of avifaunal changes in western North America studies in avian biology no. 15.
- Dinsmore, J.J. 1994. A country so full of game: the story of wildlife in Iowa. University of Iowa Press, Iowa City. 249 pp.
- Dolbeer, R.A. 1982. Migratory patterns for age and sex classes in blackbirds and starlings. *Journal of Field Ornithology* 53:28–46.
- Drilling, N., R. Titman, and F. McKinney. 2002. Mallard, *Anas platyrhynchos*. In A. Poole and F. Gill, eds. The birds of North America, No. 658. The Birds of North America, Inc., Philadelphia, PA.
- Droege, S. 1990. The North American Breeding Bird Survey. Pages 1–4 in J.R. Sauer and S. Droege, eds. Survey designs and statistical methods for the estimation of avian population trends. U.S. Fish & Wildlife Service Biological Report 90(1). Washington, DC.
- Dugger B.D., K.M. Dugger, and L.H. Fredrickson. 1994. Hooded Merganser (*Lophodytes cucullatus*). In A. Poole and F. Gill, eds. The birds of North America, No. 98. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Eaton, S.W. 1958. A life history study of the Louisiana Waterthrush. *Wilson Bulletin* 70:210–235.
- Eaton, S.W. 1988. Common Snipe. Pages 160–161 in R.F. Andrele and J.R. Carroll, eds. The atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.
- Eckerle, K.P., and C.F. Thompson. 2001. Yellow-breasted Chat (*Icteria virens*). In A. Poole and F. Gill, eds. The birds of North America, No. 575. The Birds of North America, Inc., Philadelphia, PA.
- Eddleman, W.R. 1978. Selection and management of Swainson's Warbler habitat. Master's Thesis, University of Missouri, Columbia. 75 pp.
- Eddleman, W.R., K.E. Evans, and W.H. Elder. 1980. Habitat characteristics and management of Swainson's Warbler in southern Illinois. *Wildlife Society Bulletin* 8:228–233.
- Ehrlich, P.R., D.S. Dobkin, and E. Wheye. 1988. The birder's handbook: a field guide to the natural history of North American birds. Simon and Schuster, New York. 785 pp.
- Ellison, W.G. 1992. Blue-gray Gnatcatcher. In A. Poole, P. Stettenheim, and F. Gill, eds. The birds of North America, No. 23. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Evenden, F.G. 1957. Observation on nesting behavior of the House Finch. *Condor* 59:112–117.
- Farris, A.L. 1970. Distribution and abundance of the Gray Partridge in Illinois. *Transactions of the Illinois State Academy of Science* 63:240–245.
- Ferry, J.F. 1907. Further notes from extreme southern Illinois. *Auk* 24:430–435.
- Filliater, T.S., and R. Breitwisch. 1997. Nestling provisioning by extremely dichromatic Northern Cardinal. *Wilson Bulletin* 109:145–153.

- Fink, T. 1994. Breeding evidence for Black-necked Stilt in Jackson County. *Meadowlark* 3(1):18.
- Fitzgerald, J.A., and D.N. Pashley. 2000. Partners in Flight bird conservation plan for the dissected till plains, version 1.0.
- Flieg, G.M. 1971. The European Tree Sparrow in the Western Hemisphere: its range, distribution, life history. *Audubon Bulletin* 157:2–10.
- Ford, E.R. 1930. Breeding of Brewer's Blackbird east of its normal summer range. *Auk* 47:565–566.
- Ford, E.R. 1956. Birds of the Chicago region. Chicago Academy of Sciences Special Publication 12. 117 pp.
- Friedmann, H. 1963. Host relations of the parasitic cowbirds. U.S. National Museum Bulletin No. 233. 276 pp.
- Gault, B.F. 1892. The Chestnut-sided Warbler nesting in Missouri. *Auk* 9(4):396.
- Gault, B.F. 1922. Checklist of the birds of Illinois. Illinois Audubon Society, Chicago. 80 pp.
- Gehlbach, F.R. 1995. Eastern Screech-Owl (*Otus asio*). In A. Poole and F. Gill, eds. The birds of North America, No. 165. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Geissler, P.H., and J.R. Sauer. 1990. Topics in route-regression analysis. Pages 54–57 in J.R. Sauer and S. Droege, eds. Survey design and statistical methods for the estimation of avian population trends. U.S. Fish & Wildlife Service Biological Report 90(1). Washington, DC.
- George, W.G. 1968. Check list of birds of southern Illinois. Southern Illinois University, Carbondale. Mimeographed. 28 pp.
- George, W.G. 1972. Breeding status of Purple Gallinule, Brown Creeper, and Swainson's Warbler in Illinois. *Wilson Bulletin* 84:208–210.
- Ghalambor, C.K., and T.E. Martin. 1999. Red-breasted Nuthatch (*Sitta canadensis*). In A. Poole and F. Gill, eds. The birds of North America, No. 459. The Birds of North America, Inc., Philadelphia, PA.
- Gibbs, J.P., and J. Faaborg. 1990. Estimating the viability of Ovenbird and Kentucky Warbler populations in forest fragments. *Conservation Biology* 4:193–196.
- Gibbs, J.P., F.A. Reid, and S.M. Melvin. 1992a. Least Bittern. In A. Poole, P. Stettenheim, and F. Gill, eds. The birds of North America, No. 17. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Gibbs, J.P., F.A. Reid, and S.M. Melvin. 1992b. American Bittern. In A. Poole, P. Stettenheim, and F. Gill, eds. The birds of North America, No. 18. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Gill, F.B., R.A. Canterbury, and J.L. Confer. 2001. Blue-winged Warbler (*Vermivora pinus*). In A. Poole and F. Gill, eds. The birds of North America, No. 584. The Birds of North America, Inc., Philadelphia, PA.
- Goff, O., and W. Goff. 1982. House Finches—Illinois' first successful nesting. *Illinois Audubon Bulletin* 202:29–31.
- Gowaty, P.A., and J.H. Plissner. 1998. Eastern Bluebird (*Sialia sialis*). In A. Poole and F. Gill, eds. The birds of North America, No. 381. The Birds of North America, Inc., Philadelphia, PA.
- Graber, J.W., and R.R. Graber. 1979. Severe winter weather and bird population in southern Illinois. *Wilson Bulletin* 91:88–103.
- Graber, R.R., and J.W. Graber. 1963. A comparative study of bird populations in Illinois, 1906–1909 and 1956–1958. *Illinois Natural History Survey Bulletin* 28:383–519.

- Graber, R.R., and J.W. Graber. 1981. Sharp-shinned Hawk (*Accipiter striatus*) nest in southern Illinois. Illinois Audubon Bulletin 195:28–31.
- Graber, R.R., J.W. Graber, and E.L. Kirk. 1970. Illinois birds: Mimidae. Illinois Natural History Survey Biological Notes No. 68. Champaign, IL. 38 pp.
- Graber, R.R., J.W. Graber, and E.L. Kirk. 1971. Illinois birds: Turdidae. Illinois Natural History Survey Biological Notes No. 75. Champaign, IL. 44 pp.
- Graber, R.R., J.W. Graber, and E.L. Kirk. 1972. Illinois birds: Hirundinidae. Illinois Natural History Survey Biological Notes No. 80. Champaign, IL. 36 pp.
- Graber, R.R., J.W. Graber, and E.L. Kirk. 1973. Illinois birds: Laniidae. Illinois Natural History Survey Biological Notes No. 83. Champaign, IL. 18 pp.
- Graber, R.R., J.W. Graber, and E.L. Kirk. 1974. Illinois birds: Tyrannidae. Illinois Natural History Survey Biological Notes No. 86. Champaign, IL. 56 pp.
- Graber, R.R., J.W. Graber, and E.L. Kirk. 1977. Illinois birds: Picidae. Illinois Natural History Survey Biological Notes No. 102. Champaign, IL. 73 pp.
- Graber, R.R., J.W. Graber, and E.L. Kirk. 1978. Illinois birds: Ciconiiformes. Illinois Natural History Survey Biological Notes No. 109. Champaign, IL. 80 pp.
- Graber, R.R., J.W. Graber, and E.L. Kirk. 1979. Illinois birds: Sylviidae. Illinois Natural History Survey Biological Notes No. 110. Champaign, IL. 22 pp.
- Graber, R.R., J.W. Graber, and E.L. Kirk. 1983. Illinois birds: Wood Warblers. Illinois Natural History Survey Biological Notes No. 118. Champaign, IL. 144 pp.
- Graber, R.R., J.W. Graber, and E.L. Kirk. 1985. Illinois birds: Vireonidae. Illinois Natural History Survey Biological Notes No. 124. Champaign, IL. 38 pp.
- Graber, R.R., J.W. Graber, and E.L. Kirk. 1987. Illinois birds: Corvidae. Illinois Natural History Survey Biological Notes No. 126. Champaign, IL. 42 pp.
- Greenberg, J. 1980. Sandhill Cranes nesting in Illinois. Wilson Bulletin 92:527.
- Greenlaw, J.S. 1996. Eastern Towhee (*Pipilo erythrophthalmus*). In A. Poole and F. Gill, eds. The birds of North America, No. 262. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Greer, R.M. 1966. The Brown Creeper in Illinois. Audubon Bulletin 140:25–26.
- Grier, J.W., J.B. Elder, F.J. Gramlich, N.F. Green, J.V. Kussman, J.E. Mathisen, and J.P. Mattsson. 1983. Northern states Bald Eagle recovery plan. U.S. Fish and Wildlife Service, Denver. 71 pp.
- Gross, A.O. 1940. Eastern Nighthawk. In A.C. Bent, ed. Life histories of North American cuckoos, goatsuckers, hummingbirds, and their allies. U.S. National Museum Bulletin 176:206–234.
- Grubb, T.C., Jr., and V.V. Pravosudov. 1994. Tufted Titmouse (*Parus bicolor*). In A. Poole and F. Gill, eds. The birds of North America, No. 86. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Guth, R.W. 1986. Nesting Yellow-bellied Sapsucker in Carroll County. Illinois Birds and Birding 2(2):37.
- Haggerty, T.M., and S.E. Morton. 1995. Carolina Wren (*Thryothorus ludovicianus*). In A. Poole and F. Gill, eds. The birds of North America, No. 188. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.

- Halkin, S.L., and S.U. Linville. 1999. Northern Cardinal (*Cardinalis cardinalis*). In A. Poole and F. Gill, eds. The birds of North America, No. 440. The Birds of North America, Inc., Philadelphia, PA.
- Hall, G.A. 1983. West Virginia birds: distribution and ecology. Special Publication No. 7. Carnegie Museum of Natural History, Pittsburgh, PA. 180 pp.
- Hall, G.A. 1996. Yellow-throated Warbler (*Dendroica dominica*). In A. Poole and F. Gill, eds. The birds of North America, No. 223. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Hamel, P.B. 2000. Cerulean Warbler (*Dendroica cerulean*). In A. Poole and F. Gill, eds. The birds of North America, No. 511. The birds of North America, Inc., Philadelphia, PA.
- Hands, H.M., R.D. Drobney, and M.R. Ryan. 1989. Status of the Least Bittern in the north central United States. Migratory Bird Office, U.S. Fish & Wildlife Service, Twin Cities, MN. 13 pp.
- Hanners, L.A., and S.R. Patton. 1998. Worm-eating Warbler (*Helmitheros vermivorus*). In A. Poole and F. Gill, eds. The birds of North America, No. 367. The Birds of North America, Inc., Philadelphia, PA.
- Hanson, H.C. 1965. The Giant Canada Goose. Southern Illinois University Press, Carbondale. 226 pp.
- Hardy, J.W. 1955. Records of Swainson's Warblers in southern Illinois. Wilson Bulletin 67:60.
- Hatch, J., and D.V. Weseloh. 1999. Double-crested Cormorant. In A. Poole and F. Gill, eds. The birds of North America, No. 441. The Birds of North America, Inc., Philadelphia, PA.
- Havera, S.P. 1999. Waterfowl of Illinois: status and management. Illinois Natural History Survey Special Publication 21. Champaign, IL. xliii + 628 pp.
- Havera, S.P., and L. Suloway. 1994. Wetlands. Pages 87–152 in The changing Illinois environment: critical trends. Technical Report of the Critical Trends Assessment Project. Vol. 3. Illinois Department of Energy and Natural Resources.
- Hays, R.L., and A.H. Farmer. 1990. Effect of the CRP on wildlife habitat: emergency haying in the Midwest and pine planting in the Southeast. Transactions of the North American Natural Resources Conference 55:30–39.
- Heidorn, R.R. 1993. Seasonal highlights: state's only colony of nesting Forster's Terns. Meadowlark 1(1):23–24.
- Heidorn, R.R., W.D. Glass, D.R. Ludwig, and M.A. Cole. 1991. Northeastern Illinois wetland survey for endangered and threatened birds, a summary of field data: 1980–1989. Illinois Department of Conservation, Natural Heritage General Technical Report No. 1. 157 pp.
- Hejl, S.J., K.R. Newlon, M.E. McFadzen, J.S. Young, and C.K. Ghalambor. 2002. Brown Creeper (*Certhia americana*). In A. Poole and F. Gill, eds. The birds of North America, No. 669. The Birds of North America, Inc., Philadelphia, PA.
- Hepp, G.R., and F.C. Beilrose. 1995. Wood Duck, *Aix sponsa*. (Anseriformes: Anatidae). In A. Poole and F. Gill, eds. The birds of North America, No. 169. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Herkert, J.R. 1992. Endangered and threatened species of Illinois: status and distribution. Volume 2: animals. Illinois Endangered Species Protection Board, Springfield. 142 pp.
- Herkert, J.R. 1994a. Breeding bird communities of midwestern prairie fragments: the effects of prescribed burning and habitat area. Natural Areas Journal 14:128–135.
- Herkert, J.R. 1994b. Status and habitat selection of the Henslow's Sparrow in Illinois. Wilson Bulletin 106(1):35–45.
- Herkert, J.R., D.E. Kroodsma, and J.P. Gibbs. 2001. Sedge Wren (*Cistothorus platensis*). In A. Poole and F. Gill, eds. The birds of North America, No. 581. The Birds of North America, Inc., Philadelphia, PA.

- Herkert, J.R., R.E. Szafoni, V.M. Kleen, and J.E. Schwegman. 1993. Habitat establishment, enhancement and management for forest and grassland birds in Illinois. Illinois Department of Conservation, Natural Heritage Technical Publication 1.
- Herkert, J.R., P.D. Vickery, and D.E. Kroodsma. 2002. Henslow's Sparrow (*Ammodramus henslowii*). In A. Poole and F. Gill, eds. The birds of North America, No. 672. The Birds of North America, Inc., Philadelphia, PA.
- Hess, I.E. 1910. One hundred breeding birds of an Illinois ten-mile radius. Auk 27:19–32.
- Hickey, J.J., and L.B. Hunt. 1960. Initial songbird mortality following a Dutch Elm disease control program. Journal of Wildlife Management 24:259–265.
- Hill, G.E. 1993. House Finch (*Carpodacus mexicanus*). In A. Poole and F. Gill, eds. The birds of North America, No. 46. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Holcomb, L.C. 1969. Breeding biology of the American Goldfinch in Ohio. Bird-banding 40:26–44.
- Holmes, R.T., and T.W. Sherry. 2001. Thirty-year bird population trends in an unfragmented temperate deciduous forest: importance of habitat change. Auk 118:589–609.
- Holt, D.W., and S.M. Leasure. 1993. Short-eared Owl. In A. Poole and F. Gill, eds. The birds of North America, No. 62. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Hughes, J.M. 1999. Yellow-billed Cuckoo (*Coccyzus americanus*). In A. Poole and F. Gill, eds. The birds of North America, No. 418. The Birds of North America, Inc., Philadelphia, PA.
- Hughes, J.M. 2001. Black-billed Cuckoo (*Coccyzus erythrophthalmus*). In A. Poole and F. Gill, eds. The birds of North America, No. 587. The Birds of North America, Inc., Philadelphia, PA.
- Illinois Department of Conservation. 1986. Illinois Breeding Bird Atlas Project handbook for surveyors (1986–1991). Natural Heritage Division. Springfield, IL. 14 pp.
- Ingold, J.L. 1993. Blue Grosbeak (*Guiraca caerulea*). In A. Poole and F. Gill, eds. The birds of North America, No. 79. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Ingold, J.L., and R. Galati. 1997. Golden-crowned Kinglet (*Regulus satrapa*). In A. Poole and F. Gill, eds. The birds of North America, No. 301. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Irland, L.C. 1982. Wildlands and woodlots: the story of New England's forests. University Press of New England, Hanover, NH. 217 pp.
- Iverson, L.R., R.L. Oliver, D.P. Tucher, P.G. Risser, C.D. Burnett, and R.G. Rayburn. 1989. The forest resources of Illinois: an atlas and analysis of spatial and temporal trends. Illinois Natural History Survey Special Publication 11. Illinois Natural History Survey, Champaign. 181 pp.
- Jackson, B.J.S., and J.A. Jackson. 2000. Killdeer (*Charadrius vociferous*). In A. Poole and F. Gill, eds. The birds of North America, No. 517. The Birds of North America, Inc., Philadelphia, PA.
- Jackson, J.A., H.R. Ouellet, and B.J.S. Jackson. 2002. Hairy Woodpecker (*Picoides villosus*). In A. Poole and F. Gill, eds. The birds of North America, No. 702. The Birds of North America, Inc., Philadelphia, PA.
- Jackson, L.S., C.A. Thompson, and J.J. Dinsmore. 1996. The Iowa breeding bird atlas. University of Iowa Press, Iowa City. 484 pp.
- Jackson, N.H., and D.D. Roby. 1992. Fecundity and egg-laying patterns of captive yearling Brown-headed Cowbirds. Condor 94:585–589.



- Jacobs, B., and J.D. Wilson. 1997. Missouri breeding bird atlas, 1986–1992. Missouri Department of Conservation, Jefferson City. Natural History Series, No. 6. 430 pp.
- Johnson, L.G., and W. Moskoﬀ. 1995. First hybridization attempt between a Violet-green Swallow and Tree Swallow. *Meadowlark* 4(1):2–3.
- Johnson, L.S. 1998. House Wren (*Troglodytes aedon*). In A. Poole and F. Gill, eds. The birds of North America, No. 380. The Birds of North America, Inc., Philadelphia, PA.
- Jones, S.L., and J.E. Cornely. 2002. Vesper Sparrow (*Pooecetes gramineus*). In A. Poole and F. Gill, eds. The birds of North America, No. 624. The Birds of North America, Inc., Philadelphia, PA.
- Karr, J.R. 1968. Habitat and avian diversity on strip-mined land in east-central Illinois. *Condor* 70(4):348–357.
- Kassebaum, D. 2001. First Illinois nesting record for Painted Bunting (*Passerina ciris*). *Meadowlark* 10(1):2–4.
- Kelley, J.R., Jr. 2002. American Woodcock population status, 2002. U.S. Fish and Wildlife Service, Laurel, MD. 16 pp.
- Kennedy, E.D., and D.W. White. 1996. Interference competition from House Wrens as a factor in decline of Bewick’s Wrens. *Conservation Biology* 10:281.
- Kennedy, E.D., and D.W. White. 1997. Bewick’s Wren, *Thryomanes bewickii*. In A. Poole, and F. Gill, eds. The birds of North America, No. 315. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists’ Union, Washington, DC.
- Kennicott, R. 1855. Catalogue of animals observed in Cook County, Illinois. Transactions of the Illinois State Agriculture Society for 1853–1855, Vol. 1:580–591.
- Keppie, D.M., and R.M. Whiting, Jr. 1994. American Woodcock (*Scolopax minor*). In A. Poole and F. Gill, eds. The birds of North America, No. 100. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists’ Union, Washington, DC.
- Kier, J.R., and D.D.L.R. Wilde. 1976. Observations of Swainson’s Hawk nesting in northeastern Illinois. *Wilson Bulletin* 88:658–59.
- Kilham, L. 1984. Cooperative breeding in American Crows. *Journal of Field Ornithology* 55:349–356.
- Kleen, V.M. 1973a. Report on the first statewide spring bird count. *Illinois Audubon Bulletin* 164:16–22.
- Kleen, V.M. 1973b. The density and territory size of breeding Prothonotary Warblers (*Protonotaria citrea*) in southern Illinois. M.A. Thesis, Southern Illinois University, Carbondale. 43 pp.
- Kleen, V.M. 1975. Middlewestern prairie region. *American Birds* 29:978–982.
- Kleen, V.M. 1976a. What’s in the future for cormorants? *Illinois Audubon Bulletin* 175:20–24.
- Kleen, V.M. 1976b. Middlewestern prairie region. *American Birds* 30:961–965.
- Kleen, V.M. 1977. Middlewestern prairie region. *American Birds* 31:1146–1150.
- Kleen, V.M. 1978. Middlewestern prairie region. *American Birds* 32:1166–1171.
- Kleen, V.M. 1982. Field notes: breeding season. *Illinois Audubon Bulletin* 203:25–39.
- Kleen, V.M. 1986. Field notes: breeding season. *Illinois Birds and Birding* 2(1):11–17.
- Kleen, V.M. 1987. Field notes: breeding season. *Illinois Birds and Birding* 3(1):12–16.

- Kleen, V.M. 1990. Field notes: 1989 breeding season. *Illinois Birds and Birding* 6(1):15–22.
- Kleen, V.M. 1992. Field notes: 1991 breeding season. *Meadowlark* 1(1):25–40.
- Kleen, V.M. 1995. Field notes: the 1994 breeding season. *Meadowlark* 4(1):25–40.
- Kleen, V.M. 1999. Field notes: the 1998 breeding season report. *Meadowlark* 8(1):26–40.
- Kleen, V.M. 2000a. Field notes: the 1999 breeding season report. *Meadowlark* 9(1):25–40.
- Kleen, V.M. 2000b. The 2000 Illinois statewide spring bird count. *Illinois Audubon* 273:14a–14h.
- Kleen, V.M. 2001a. 2000 colonial waterbird survey report. Avian Program, Illinois Department of Natural Resources, Springfield. 11 pp.
- Kleen, V.M. 2001b. The 2001 Illinois statewide spring bird count. *Illinois Audubon* 278:14a–14j.
- Kleen, V.M. 2001c. Field notes: the 2000 breeding season report. *Meadowlark* 10(1):24–40.
- Kleen, V.M. 2002a. Field notes: the 2001 breeding season report. *Meadowlark* 11(1):26–40.
- Kleen, V.M. 2002b. 2001 colonial waterbird survey report. Avian Program, Illinois Department of Natural Resources, Springfield. 7 pp.
- Kleen, V.M., and L. Bush. 1973. Middlewestern prairie region. *American Birds* 27(4):777–781.
- Kleen, V.M., D. Newman, and G. Kerkhover. 2001. Scissor-tailed Flycatchers nest in Illinois. *Illinois Audubon* 278:18–19.
- Kleen, V.M., and J. Schwegman. 1992. First Fish Crow nest in Illinois. *Meadowlark* 2(1):15.
- Klimkiewicz, M.K., and C.S. Robbins. 1978. Standard abbreviations for common names of birds. *North American Bird Bander* 3(1):16–25.
- Knapton, R.W. 1994. Clay-colored Sparrow (*Spizella pallida*). In A. Poole and F. Gill, eds. *The birds of North America*, No. 120. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Kricher, J.C. 1995. Black-and-white Warbler (*Mniotilta varia*). In A. Poole and F. Gill, eds. *The birds of North America*, No. 158. The Academy of Natural Sciences, Philadelphia, PA, and the American Ornithologists' Union, Washington, DC.
- Lanyon, W.E. 1994. Western Meadowlark (*Sturnella neglecta*). In A. Poole and F. Gill, eds. *The birds of North America*, No. 104. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Lanyon, W.E. 1995. Eastern Meadowlark (*Sturnella magna*). In A. Poole and F. Gill, eds. *The birds of North America*, No. 160. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Larson, G.E. 1973. The Monk Parakeet in Illinois: new views of alarm. *Audubon Bulletin* 166:29–30.
- Laughlin, S.B, D.P. Kibbe, and P.F.J. Eagles. 1982a. Atlasing for breeding birds in North America: an idea whose time has come. *American Birds* 36:6–19.
- Laughlin, S.B, D.P. Kibbe, and C.S. Robbins, eds. 1982b. *Proceedings of the Northeastern Breeding Bird Atlas Conference*, Nov. 6–8, 1981. Vermont Institute of Natural Science, Woodstock.
- Link, W.A., and J.R. Sauer. 1994. Estimating equations estimates of trends. *Bird Populations* 2:23–32.
- Long, J.L. 1981. *Introduced birds of the world*. Universe Books, New York. 528 pp.

- Lovette, I.J., and E. Bermingham. 2002. What is a Wood-warbler? Molecular characterization of a monophyletic parulidae. *Auk* 119:695–714.
- Lowther, P.E. 1983. The nesting biology of House Sparrows: intercolony variation. Occasional Papers No. 107, Museum of Natural History, University of Kansas.
- Lowther, P.E. 1993. Brown-headed Cowbird (*Molothrus ater*). In A. Poole and F. Gill, eds. The birds of North America, No. 47. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Lowther, P.E., and C.L. Cink. 1992. House Sparrow. In A. Poole, P. Stettenheim, and F. Gill, eds. The birds of North America, No. 12. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Luman, D.E., M.G. Joselyn, and L. Suloway. 1996. Land cover of Illinois poster and database. Illinois Department of Natural Resources, Illinois Natural History Survey, and Illinois State Geological Survey.
- Lyon, W.I. 1930. Brewer's Blackbird nesting in Illinois. *Wilson Bulletin* 42:214.
- Lyon, W.I. 1937. First record of Common Terns nesting in Illinois. *The Audubon Annual Bulletin* 27:29.
- MacWhirter, R.B., and K.L. Bildstein. 1996. Northern Harrier (*Circus cyaneus*). In A. Poole and F. Gill, eds. The birds of North America, No. 210. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Mah, J., and G.L. Nuechterlein. 1991. Feeding behavior of Red-winged Blackbirds on bird-resistant sunflowers. *Wildlife Society Bulletin* 19:39–46.
- Marti, C.D. 1992. Barn Owl. In A. Poole, P. Stettenheim, and F. Gill, eds. The Birds of North America, No. 1. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Martin, J.W., and J.R. Parrish. 2000. Lark Sparrow (*Chondestes grammacus*). In A. Poole and F. Gill, eds. The birds of North America, No. 488. The Birds of North America, Inc., Philadelphia, PA.
- Martin, S.G. 1971. Polygyny in the Bobolink: habitat quality and the adaptive complex. Ph.D. dissertation, Oregon State University, Corvallis.
- Martin, S.G. 2002. Brewer's Blackbird (*Euphagus cyanocephalus*). In A. Poole and F. Gill, eds. The birds of North America, No. 616. The Birds of North America, Inc., Philadelphia, PA.
- Martin, S.G., and T.A. Gavin. 1995. Bobolink (*Dolichonyx oryzivorus*). In A. Poole and F. Gill, eds. The birds of North America, No. 176. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Mazur, K.M., and P.C. James. 2000. Barred Owl (*Strix varia*). In A. Poole and F. Gill, eds. The birds of North America, No. 508. The Birds of North America, Inc., Philadelphia, PA.
- McCarty, J.P. 1996. Eastern Wood-Pewee. In A. Poole and F. Gill, eds. The birds of North America, No. 245. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- McDonald, M.V. 1998. Kentucky Warbler (*Oporornis formosus*). In A. Poole and F. Gill, eds. The birds of North America, No. 324. The Birds of North America, Inc., Philadelphia, PA.
- McGowan, K.J. 2001. Fish Crow (*Corvus ossifragus*). In A. Poole and F. Gill, eds. The birds of North America, No. 589. The Birds of North America, Inc., Philadelphia, PA.
- McNicholl, M.K., P.E. Lowther, and J.A. Hall. 2001. Forster's Tern. In A. Poole, P. Stettenheim, and F. Gill, eds. The birds of North America, No. 402. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.

- Meanley, B. 1971. Blackbirds and the southern rice crop. U.S. Fish and Wildlife Service Resource Publication 100.
- Meanley, B. 1992. King Rail. *In* A. Poole, P. Stettenheim, and F. Gill, eds. The birds of North America, No. 3. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Middleton, A.L.A. 1977. The effect of cowbird parasitism on American Goldfinch nesting. *Auk* 94:304–307.
- Middleton, A.L.A. 1998. Chipping Sparrow (*Spizella passerina*). *In* A. Poole and F. Gill, eds. The birds of North America, No. 334. The Birds of North America, Inc., Philadelphia, PA.
- Middleton, A.L.A., and D.R.C. Prescott. 1989. Polygyny, extra-pair copulations, and nest helpers in the Chipping Sparrow, *Spizella passerine*. *Canadian Field-Naturalist* 103:61–64.
- Milosevich, J., and J. Olson. 1981. Nesting Canada Warblers in Joliet, Illinois. *Audubon Bulletin* 197:23–26.
- Mirarchi, R.E., and T.S. Baskett. 1994. Mourning Dove (*Zenaida macroura*). *In* A. Poole and F. Gill, eds. The birds of North America, No. 117. The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, DC.
- Moldenhauer, R.R., and D.J. Regelski. 1996. Northern Parula (*Parula Americana*). *In* A. Poole and F. Gill, eds. The birds of North America, No. 215. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Morse, D.H. 1993. Black-throated Green Warbler (*Dendroica virens*). *In* A. Poole and F. Gill, eds. The birds of North America, No. 55. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Morss, J. 1999. Abundances, area sensitivity and habitat specificities of rare forest birds breeding in Illinois. Illinois Natural History Survey, Champaign. 48 pp.
- Moskoff, W. 1995. Veery (*Catharus fuscescens*). *In* A. Poole and F. Gill, eds. The birds of North America, No. 142. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithological Union, Washington, DC.
- Mostrom, A.M., R.L. Curry, and B. Lohr. 2002. Carolina Chickadee (*Poecile carolinensis*). *In* A. Poole and F. Gill, eds. The birds of North America, No. 636. The Birds of North America, Inc., Philadelphia, PA.
- Mott, D.F. 1984. Research on winter roosting blackbirds and starlings in the southeastern United States. Pages 183–187 *in* D.O. Clark, R.E. Marsh, and D.E. Beadle, eds. Proceedings, 11th Vertebrate Pest Conference, University of California, Davis.
- Mountjoy, D.J. 1987. Behavioral ecology of the Cedar Waxwing during the breeding season. M.S. Thesis, Queen's University, Kingston, Ontario.
- Mowbray, T.B. 1997. Swamp Sparrow (*Melospiza georgiana*). *In* A. Poole and F. Gill, eds. The birds of North America, No. 279. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Mowbray, T.B. 1999. Scarlet Tanager (*Piranga olivacea*). *In* A. Poole and F. Gill, eds. The birds of North America, No. 479. The Birds of North America, Inc., Philadelphia, PA.
- Mueller, H. 1999. Common Snipe. *In* A. Poole and F. Gill, eds. The birds of North America, No. 417. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Nelson, E.W. 1876. Birds of north-eastern Illinois. *Essex Institute Bulletin* 8:90–155.
- Nelson, E.W. 1877. Notes upon birds observed in southern Illinois between July 17 and September 4, 1875. *Essex Institute Bulletin* 9:32–65.

- Newman, D.S., R.E. Warner, and P.C. Mankin. 2003. Creating habitats and homes for Illinois wildlife. Illinois Department of Natural Resources and the University of Illinois. 212 pp.
- Nisbet, I.C.T. 1989. Organochlorines, reproductive impairment, and declines in Bald Eagle *Haliaeetus leucocephalus* populations: mechanisms and dose relationships. Pages 483–489 in B.U. Meyburg and R.D. Chancellor, eds. Raptors in the modern world. World Working Group for Birds of Prey. Berlin, Germany.
- Nisbet, I.C.T. 2002. Common Tern (*Sterna hirundo*). In A. Poole and F. Gill, eds. The birds of North America, No. 618. The Birds of North America, Inc., Philadelphia, PA.
- Nolan, V. 1978. The ecology and behavior of the Prairie Warbler *Dendroica discolor*. Ornithological Monographs 26. Washington, DC. 595 pp.
- Nolan, V., Jr., E.D. Ketterson, and C.A. Buerkle. 1999. Prairie Warbler (*Dendroica discolor*). In A. Poole and F. Gill, eds. The birds of North America, No. 455. The Birds of North America, Inc., Philadelphia, PA.
- Noon, B.R., D.K. Dawson, D.B. Inkley, C.S. Robbins, and S.H. Anderson. 1980. Consistency in habitat preference of forest bird species. Transactions of the North American Wildlife and Natural Resource Conference 45:226–244.
- North American Ornithological Atlas Committee. 1990. Handbook for atlasing American breeding birds. C. Smith, ed. Vermont Institute of Natural Sciences, Woodstock. 72 pp.
- Ogden, L.J., and B.J. Stutchbury. 1994. Hooded Warbler (*Wilsonia citrina*). In A. Poole and F. Gill, eds. The birds of North America, No. 110. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Orians, G.H. 1980. Some adaptations of marsh-nesting blackbirds. Princeton University Press, Princeton, NJ.
- Orians, G.H., and L.D. Beletsky. 1989. Red-winged Blackbird. Pages 183–197 in I. Newton, ed. Lifetime reproduction in birds. Academic Press, New York.
- Oring, L.W., E.M. Gray, and J.M. Reed. 1997. Spotted Sandpiper. In A. Poole and F. Gill, eds. The birds of North America, No. 289. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Parker, J.W. 1999. The Mississippi Kite (*Ictinia mississippiensis*). In A. Poole and F. Gill, eds. The birds of North America, No. 402. The Birds of North America, Inc., Philadelphia, PA.
- Parsons, K.C., and T.L. Master. 2000. Snowy Egret (*Egretta thula*). In A. Poole and F. Gill, eds. The birds of North America, No. 489. The Birds of North America, Inc., Philadelphia, PA.
- Payne, R.B. 1992. Indigo Bunting. In A. Poole, P. Stettenheim, and G. Gill, eds. The birds of North America, No. 4. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Peterjohn, B.G. 1989. The birds of Ohio. Indiana University Press, Bloomington. 237 pp.
- Peterjohn, B.G., and D.L. Rice. 1991. The Ohio breeding bird atlas. Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Columbus. 416 pp.
- Peterjohn, B.G., and J.R. Sauer. 1993. North American breeding bird survey 1990–1991. Bird Populations 1:1–15.
- Peterjohn, B.G., J.R. Sauer, and C.S. Robbins. 1995. Population trends from the North American breeding bird survey. Pages 3–39 in T.E. Martin and D.M. Finch, eds. Ecology and management of Neotropical migratory birds. Oxford University Press, New York.
- Petersen, P.C., Jr. 1964. Nesting season. Middlewestern prairie region. Audubon Field Notes 18(5):511–512.
- Petit, L.J. 1999. Prothonotary Warbler (*Protonotaria citrea*). In A. Poole and F. Gill, eds. The birds of North America, No. 408. The Birds of North America, Inc., Philadelphia, PA.

- Pierotti, R.J., and T.P. Good. 1994. Herring Gull. *In* A. Poole and F. Gill, eds. The birds of North America, No. 124. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Pitelka, F.A. 1939. Mourning Warbler breeding in northeastern Illinois. *Auk* 56(4):481.
- Pitochelli, J. 1993. Mourning Warbler (*Oporornis philadelphia*). *In* A. Poole, P. Stettenheim, and F. Gill, eds. The birds of North America, No. 72. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Poole, A.F., R.O. Bierregaard, and M.S. Martell. 2002. Osprey (*Pandion haliaetus*). *In* A. Poole and F. Gill, eds. The birds of North America, No. 683. The Birds of North America, Inc., Philadelphia, PA.
- Preno, W.L., and R.F. Labisky. 1971. Abundance and harvest of doves, pheasants, bobwhites, squirrels and cottontails in Illinois, 1956–1969. Illinois Department of Conservation Technical Bulletin 4. 76 pp.
- Prentice, D.S. 1949. Nesting of Swainson's Hawks in Illinois. *Auk* 66:83.
- Prescott, K.W. 1965. The Scarlet Tanager (*Piranga olivacea*). New Jersey State Museum Investigation No. 2.
- Preston, C.R., and R.D. Beane. 1993. Red-tailed Hawk. *In* A. Poole and F. Gill, eds. The birds of North America, No. 52. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Pruitt, L. 1996. Henslow's Sparrow status assessment. U.S. Fish and Wildlife Service, Bloomington Ecological Services Field Office, Bloomington, IN. 113 pp.
- Pucelik, T., and P. Pucelik. 1984. The discovery of Illinois' first nesting Clay-colored Sparrows. Illinois Audubon Bulletin 208:27–28.
- Raynor, G.S. 1983. A method for evaluating quality of coverage in breeding bird atlas projects. *American Birds* 37:9–13.
- Richardson, M., and D.W. Brauning. 1995. Chestnut-sided Warbler (*Dendroica pensylvanica*). *In* A. Poole and F. Gill, eds. The birds of North America, No. 190. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Ridgway, R. 1874. Catalog of the birds ascertained to occur in Illinois. *Lyceum of Natural History of New York Annals* 10:364–394.
- Ridgway, R. 1889. The ornithology of Illinois. Vol. 1. Illinois State Laboratory of Natural History. 520 pp.
- Ridgway, R. 1895. The ornithology of Illinois. Vol. 2. Illinois State Laboratory of Natural History. 202 pp.
- Ridgway, R. 1915. Bird-life in southern Illinois. IV. Changes which have taken place in half a century. *Bird-Lore* 17:191–198.
- Rising, J.D., and N.J. Flood. 1998. Baltimore Oriole (*Icterus galbula*). *In* A. Poole and F. Gill, eds. The birds of North America, No. 384. The Birds of North America, Inc., Philadelphia, PA.
- Robbins, C.S., D. Bystrak, and P.H. Geissler. 1986. The breeding bird survey: its first fifteen years, 1965–1979. U.S. Department of the Interior Fish and Wildlife Service Resource Publication 157. Washington, DC. 196 pp.
- Robbins, C.S., D.K. Dawson, and B.A. Dowell. 1989. Habitat area requirements of breeding forest birds of the Middle Atlantic states. *Wildlife Monograph* 103:1–34.
- Robertson, R.J., B.J. Stutchbury, and R.R. Cohen. 1992. Tree Swallow. *In* A. Poole, P. Stettenheim, and F. Gill, eds. The birds of North America, No. 11. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.

- Robinson, S.K. 1992. Population dynamics of breeding Neotropical migrants in a fragmented Illinois landscape. Pages 408–418 in J.M. Hagan III and D.W. Johnston, eds. Ecology and conservation of Neotropical migrant landbirds. Smithsonian Institution Press, Washington, DC.
- Robinson, S.K. 1994. Nesting success of forest songbirds in northwestern Illinois. Final Report, Project W-115-R-3. Illinois Natural History Survey Center for Wildlife Ecology, Champaign.
- Robinson, S.K. 1995. First two nests of Black-throated Green Warblers in Illinois. *Meadowlark* 4(1):17.
- Robinson, S.K., J.A. Grzybowski, S.I. Rothstein, M.C. Brittingham, L.J. Petit, and F.R. Thompson. 1993. Management implications of cowbird parasitism on neotropical migrant songbirds. Pages 93–102 in Status and management of Neotropical migratory birds, Sept. 21–25, 1992. General Technical Report RM-229. USDA, FS. Estes Park, CO.
- Robinson, S.K., F.R. Thompson, T.M. Donovan, D.R. Whitehead, and J. Faaborg. 1995. Regional forest fragmentation and the nesting success of migratory birds. *Science* 267:1987–1990.
- Robinson, W.D. 1990. Louisiana Waterthrush foraging behavior and microhabitat selection in southern Illinois. Master's thesis, Southern Illinois University, Carbondale.
- Robinson, W.D. 1995. Louisiana Waterthrush (*Seiurus motacilla*). In A. Poole and F. Gill, eds. The birds of North America, No. 151. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Robinson, W.D. 1996. Summer Tanager (*Piranga rubra*). In A. Poole and F. Gill, eds. The birds of North America, No. 248. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Rodewald, P.G., and R.D. James. 1996. Yellow-throated Vireo. In A. Poole and F. Gill, eds. The birds of North America, No. 287. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Rodewald, P.G., J.H. Withgott, and K.G. Smith. 1999. Pine Warbler (*Dendroica pinus*). In A. Poole and F. Gill, eds. The birds of North American, No. 438. The Birds of North America, Inc., Philadelphia, PA.
- Rohwer, F.C., W.P. Johnson, and E.R. Loos. 2002. Blue-winged Teal (*Anas discors*). In A. Poole and F. Gill, eds. The birds of North America, No. 625. The Birds of North America, Inc., Philadelphia, PA.
- Roseberry, J.L., and W.D. Klimstra. 1984. Population ecology of the Bobwhite. Southern Illinois University Press, Carbondale. 259 pp.
- Rosenfield, R.N., and J. Bielefeldt. 1993. Cooper's Hawk (*Accipiter cooperii*). In A. Poole and F. Gill, eds. The birds of North America, No. 75. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Rusch, D.H., S. Destefano, M.C. Reynolds, and D. Lauten. 2000. Ruffed Grouse (*Bonasa umbellus*). In A. Poole and F. Gill, eds. The birds of North America, No. 515. The Birds of North America, Inc., Philadelphia, PA.
- Ryder, J.P. 1993. Ring-billed Gull. In A. Poole, P. Stettenheim, and F. Gill, eds. The birds of North America, No. 33. The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, DC.
- Sallabanks, R., and F.C. James. 1999. American Robin (*Turdus migratorius*). In A. Poole and F. Gill, eds. The birds of North America, No. 462. The Birds of North America, Inc., Philadelphia, PA.
- Sauer, J.R., and S. Droege. 1990. Wood Duck population trends from the North American Breeding Bird Survey. In L.H. Fredrickson, G.V. Burger, S.P. Havera, D.A. Graber, R.E. Kirby, and T.S. Taylor, eds. The 1988 North American Wood Duck Symposium. St. Louis, MO. 390 pp.
- Sauer, J.R., J.E. Hines, and J. Fallon. 2001. The North American Breeding Bird Survey, results and analysis 1966–2000. Version 2001.2. U.S. Geological Survey, Patuxent Wildlife Research Center, Laurel, MD. Website: [www.mp2-pwrc.usgs.gov/bbs/](http://www.mp2-pwrc.usgs.gov/bbs/).



- Saunders, A.A. 1911. A study of the nesting of the Cedar Waxwing. *Auk* 28:323–329.
- Schantz, O.M. 1928. Birds of Illinois. Conservation Publication No. 6. State of Illinois, Department of Conservation, Springfield. 130 pp.
- Schroeder, M.A., and L.A. Robb. 1993. Greater Prairie-Chicken. In A. Poole, P. Stettenheim, and F. Gill, eds. The birds of North America, No. 36. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Schwegman, J.E., G.B. Fell, M.D. Hutchinson, G. Paulson, W.M. Shepard, and J. White. 1973. Comprehensive plan for the Illinois Nature Preserves System. Part 2: the Natural Divisions of Illinois. Illinois Nature Preserve Commission, Springfield. 32 pp.
- Sealy, S.G. 1980. Breeding biology of Orchard Orioles in a new population in Manitoba. *Canadian Field-Naturalist* 94:154–158.
- Sealy, S.G. 1994. Observed acts of egg destruction, egg removal and predation on nests of passerine birds at Delta Marsh, Manitoba. *Canada Field-Naturalist* 108:41–51.
- Sealy, S.G., and D.L. Neudorf. 1995. Male Northern Orioles eject cowbird eggs: implications for the evolution of ejection behavior. *Condor* 97:76–84.
- Shackelford, C.E., R.E. Brown, and R.N. Conner. 2000. Red-bellied Woodpecker (*Melanerpes carolinus*). In A. Poole and F. Gill, eds. The birds of North America, No. 500. The Birds of North America, Inc., Philadelphia, PA.
- Sherry, D. 1989. Food storing in the Paridae. *Wilson Bulletin* 101:289–304.
- Sherry, T.W., and R.T. Holmes. 1997. American Redstart (*Setophaga ruticilla*). In A. Poole and F. Gill, eds. The birds of North America, No. 227. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Sibley, C.G., and J.E. Ahlquist. 1982. The relationships of the Yellow-breasted Chat (*Icteria virens*) and the alleged slow-down in the rate of macromolecular evolution in birds. *Postilla* 187:1–19.
- Sibley, D.A. 2000. The Sibley guide to birds. Alfred A. Knopf, New York. 544 pp.
- Simpson, S.A., and T.L. Esker. 1997. Prairie Ridge State Natural Area Habitat Plan. Illinois Department of Natural Resources, Division of Natural Heritage, Springfield.
- Smith, H.R., and P.W. Parmalee. 1955. A distributional checklist of the birds of Illinois. Illinois State Museum Popular Science Series 4. 62 pp.
- Smith, K.G. 1986. Winter population dynamics of three species of mast-eating birds in the eastern United States. *Wilson Bulletin* 89:407–418.
- Smith, S.M. 1993. Black-capped Chickadee. In A. Poole, P. Stettenheim, and F. Gill, eds. The birds of North America, No.39. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- South, J. 1999. The status of the Monk Parakeet in Illinois: with comments on its native habitat and habits. *Meadowlark* 8:2–5.
- Southern, W.E. 1987. Review of “Ring-billed Gull in Ontario: a review of a new problem species” (see Blokpoel and Tessier 1986). *Auk* 104:359–361.
- Stauffer, D.F., and L.B. Best. 1982. Nest-site selection by cavity-nesting birds of riparian habitats in Iowa. *Wilson Bulletin* 94:329–337.

- Stricker, N.J., and C.R. Paine. 1996a. Virginia Rail, *Rallus limicola*, biological assessment. Max McGraw Wildlife Foundation, Dundee, IL. 17 pp.
- Stricker, N.J., and C.R. Paine. 1996b. Sora, *Porzana carolina*, biological assessment. Max McGraw Wildlife Foundation. Dundee, IL. 19 pp.
- Struthers, K. 1974. The I.A.S. 1973 Christmas Count. Illinois Audubon Bulletin 168:11–27.
- Suloway, L., and M. Hubbell. 1994. The wetland resources of Illinois: an analysis and atlas. Illinois Natural History Survey Special Publication No. 15. 88 pp.
- Suloway, L., D. Szafoni, and D. Greer. 2002. Land cover of Illinois in the early 1800s. Poster. Illinois Natural History Survey, Champaign.
- Sutcliffe, S.M., R.E. Bonney, Jr., and J.D. Lowe. 1986. Proceedings of the Second Northeastern Breeding Bird Atlas Conference, April 25–27, 1986. Laboratory of Ornithology, Cornell University, Ithaca, NY. 192 pp.
- Tacha, T.C., S.A. Nesbitt, and P.A. Vohs. 1992. Sandhill Crane. In A. Poole, P. Stettenheim, and F. Gill, eds. The birds of North America, No. 31. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Tarbel, A.T. 1983. A yearling helper with a Tufted Titmouse. Journal of Field Ornithology 54:89.
- Telfair, R.C. II. 1994. Cattle Egret, *Bubulcus ibis*. In A. Poole and F. Gill, eds. The birds of North America, No. 113. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Temple, S.A. 2002. Dickcissel (*Spiza americana*). In A. Poole and F. Gill, eds. The birds of North America, No. 703. The Birds of North America, Inc., Philadelphia, PA.
- Thayer, C. 1999. Illinois' second confirmed breeding of Osprey. Meadowlark 8(1):6–7.
- Tobin, M.E. (ed.). 1999. Symposium on Double-crested Cormorants: population status and management issues in the Midwest. USDA Technical Bulletin No. 1879. 164 pp.
- Tuck, L.M. 1972. The Snipes: a study of the Genus *Capella*. Canadian Wildlife Service, Monograph Series No. 5.
- Twedt, D.J., and R.D. Crawford. 1995. Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*). In A. Poole and F. Gill, eds. The birds of North America, No. 192. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- United States Fish and Wildlife Service. 2002. Waterfowl population status 2002. U.S. Department of the Interior, Washington, DC. 51 pp.
- United States Fish and Wildlife Service and Canadian Wildlife Service. 1991. North American Bird Banding Manual. Vol. 1. Office of Migratory Bird Management, Washington, DC.
- United States Geological Survey. 2002. Patuxent Wildlife Research Center, North American Breeding Bird Survey website: [www.mp2-pwrc.usgs.gov/bbs/](http://www.mp2-pwrc.usgs.gov/bbs/). 3 June 2002.
- Van Bael, S., and S. Pruett-Jones. 1996. Exponential population growth of Monk Parakeets in the United States. Wilson Bulletin 108:584–588.
- Van Horn, M.A. 1990. The relationship between edge and the pairing success of the Ovenbird (*Seiurus aurocapillus*). M.A. thesis, University of Missouri, Columbia.
- Van Horn, M.A., and T.M. Donovan. 1994. Ovenbird (*Seiurus aurocapillus*). In A. Poole and F. Gill, eds. The birds of North America, No. 88. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.

- Verbeek, N.A.M., and C. Caffrey. 2002. American Crow. *In* A. Poole and F. Gill, eds. The birds of North America, No. 647. The Birds of North America, Inc., Philadelphia, PA.
- Vickery, P.D. 1996. Grasshopper Sparrow (*Ammodramus savannarum*). *In* A. Poole and F. Gill, eds. The birds of North America, No. 239. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Walkinshaw, L.H. 1968. Eastern Field Sparrow. Pages 1217–1236 *in* O.L. Austin, ed. Life histories of North American cardinals, grosbeaks, buntings, towhees, finches, sparrows, and allies. U.S. National Museum Bulletin No. 237.
- Wallace, G.J., W.P. Nickell, and R.F. Bernard. 1961. Bird mortality in the Dutch elm disease program. Cranbrook Institute of Science Bulletin No. 41, Bloomfield Hills, MI.
- Walters, E.L., E.H. Miller, and P.E. Lowther. 2002. Yellow-bellied Sapsucker. *In* A. Poole and F. Gill, eds. The birds of North America, No. 662. The Birds of North America, Inc., Philadelphia, PA.
- Walters, E.W., and T. Brown. 1989. Illinois' first record of nesting Golden-crowned Kinglets. Illinois Birds and Birding 5(2):40–42.
- Warner, R.E. 1981. Illinois pheasants: population, ecology, distribution, and abundance, 1900–1978. Illinois Natural History Survey Biological Notes 115. 22 pp.
- Weaver, R.L., and F.H. West. 1943. Notes on the breeding of the Pine Siskin. Auk 60:492–504.
- Wedgwood, J.A. 1973. Nighthawks in the city. Blue Jay 31:82–88.
- Weeks, H.P., Jr. 1994. Eastern Phoebe (*Sayornis phoebe*). *In* A. Poole and F. Gill, eds. The birds of North America, No. 94. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Weller, M.W., and C.S. Spatcher. 1965. Role of habitat in the distribution and abundance of marsh birds. Agriculture and Home Economics Experiment Station, Iowa State University, Department of Zoology and Entomology, Special Report No. 43. 31 pp.
- Westemeier, R.L., and W.R. Edwards. 1987. Prairie-Chickens: survival in the Midwest. Pages 119–131 *in* H. Kallman, ed. Restoring America's wildlife 1937–1987: the first 50 years of the Federal Aid in Wildlife Restoration (Pittman-Robertson) Act. U.S. Department of the Interior, U.S. Fish and Wildlife Service. U.S. Government Printing Office, Washington, DC.
- Wheelwright, N.T., and J.D. Rising. 1993. Savannah Sparrow (*Passerculus sandwichensis*). *In* A. Poole and F. Gill, eds. The birds of North America, No. 45. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- White, C.M., N.E. Clum, T.J. Cadle, and W.G. Hunt. 2002. Peregrine Falcon (*Falco peregrinus*). *In* A. Poole and F. Gill, eds. The birds of North America, No. 660. The Birds of North America, Inc., Philadelphia, PA.
- White, J. 1978. Illinois Natural Area Inventory technical report. Vol. 1. Survey methods and results. Illinois Natural Areas Inventory, Urbana. 426 pp.
- Whitehead, D.R., and T. Taylor. 2002. Acadian Flycatcher. *In* A. Poole and F. Gill, eds. The birds of North America, No. 614. The Birds of North America, Inc., Philadelphia, PA.
- Widmann, O. 1889. History of the House Sparrow, *Passer domesticus*, and the European Tree Sparrow, *Passer montanus*, at Saint Louis, MO. Pages 191–194 *in* W.B. Barrows, ed. The English Sparrow in North America. U.S. Department of Agriculture Bulletin of Economic Ornithology. Mammal. No. 1.
- Widmann, O. 1907. A preliminary catalog of the birds of Missouri. Academy of Science of St. Louis Transactions 17(1). 288 pp.

- Wiemeyer, S.N., C.M. Burick, and C.J. Stafford. 1993. Environmental contaminants in Bald Eagle eggs—1980–1984—and further interpretations of relationships to productivity and shell thickness. *Archives of Environmental Contamination and Toxicology* 24:213–277.
- Wiley, R.H. 1996. Affiliation between the sexes in Common Grackles: specificity and seasonal progression. *Zeitschrift für Tierpsychologie* 40:59–69.
- Will, R.L. 1973. Breeding success, numbers, and movements of House Sparrows at McLeansboro, Illinois. *Ornithological Monographs* 14:60–78.
- Williamson, C. 2002. State's first confirmed nesting White-throated Sparrow. *Meadowlark* 11(2):42–43.
- Wing, L. 1943. Spread of the starling and English Sparrow. *Auk* 60:74–87.
- Witmer, M.C. 1996. Annual diet of Cedar Waxwing based on U.S. Biological Survey records (1885–1950) compared to diet of American Robin: contrasts in dietary patterns and natural history. *Auk* 113:414–430.
- Wolfenbarger, L.L. 1999. Red coloration of male Northern Cardinals correlates with mate quality and territory quality. *Behavioral Ecology* 10:80–90.
- Yasukawa, K., and W.A. Searcy. 1995. Red-winged Blackbird (*Agelaius phoeniceus*). In A. Poole and F. Gill, eds. *The birds of North America*, No. 184. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Yetter, A.P. 1992. Population densities and use of palustrine wetlands by breeding waterfowl in northeastern Illinois. M.S. thesis, Southern Illinois University, Carbondale. 196 pp.
- Yosef, R. 1996. Loggerhead Shrike (*Lanius ludovicianus*). In A. Poole and F. Gill, eds. *The birds of North America*, No. 231. The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, DC.
- Zaias, J., and R. Breitwisch. 1989. Intra-pair cooperation, fledgling care, and renesting by Northern Mockingbirds. *Ethology* 80:94–110.
- Zink, R.M., and B.A. Fall. 1981. Breeding distribution, song, and habitat of the Alder Flycatcher and Willow Flycatcher in Minnesota. *Loon* 53:208–214.

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## ***About the Authors***

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**Vernon Kleen**, now retired, was the avian program manager for the Illinois Department of Natural Resources from 1972 to 2001. His work for the Department focused primarily on the population status and distribution of nongame species with particular emphasis on endangered and threatened species. Vern served as the project coordinator for the Illinois Breeding Bird Atlas project. He was responsible for its inception in the state and for coordination and management of the atlas project, as well as being a co-author of this publication.

**Liane Cordle** is a research scientist at the Illinois Natural History Survey where the focus of her work is the study of natural resources using Geographic Information Systems (GIS) technology. Her major contributions to the atlas included the data summary and analysis, the Breeding Bird Survey information, production of the maps and figures, species accounts, and publication coordination.

**Robert A. Montgomery** was the senior staff biologist for the Max McGraw Wildlife Foundation from 1969 to 2003. He is involved in a variety of research and habitat development projects working with game and nongame birds and serves on several local, state, and regional conservation committees. He has been involved in the Illinois Breeding Bird Atlas project from its inception, serving as data manager and member of the publication committee, and contributing to the data summary and analysis, land cover and habitats, breeding bird survey, and species accounts sections of this publication.







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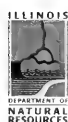
## INHS SPECIAL PUBLICATION 26

**THE ILLINOIS BREEDING BIRD ATLAS PROJECT** is a comprehensive statewide survey of the birds that breed in Illinois. Among the goals of the atlas project were the determination of the distributions of breeding birds and their status in the state, documentation of a baseline for future analysis, and education of the public about this natural resource.

Over a six-year period from 1986 to 1991, hundreds of volunteers spent thousands of hours locating birds and collecting data using standardized protocol in precisely located areas throughout the state. Of the 197 bird species reported with some evidence of breeding in Illinois during the atlas project, 172 species were documented as confirmed breeders, 15 species as probable breeders, and 10 species as possible breeders.

This publication summarizes the results of the data collection. The introductory sections include a description of the project, its methodology, and a summary of results. The species accounts section includes information on the range, abundance, breeding habitat, life history, historical status, recent population trends, and distribution in the state for 183 species which bred in Illinois during the atlas project period.

The Illinois Breeding Bird Atlas Project data provide a baseline for measuring future changes in the state's avifauna and will help in efforts to conserve, protect, and enhance this natural resource.



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